



TWELFTH
ANNUAL REPORT
ON THE
HEALTH OF SALFORD,

BY

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Town Hall, Salford,
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TO THE GENERAL HEALTH COMMITTEE.

GENTLEMEN,


I beg herewith to present to you the Twelfth Annual Report on the Health of Salford, namely that for the year 1880. By way of apology for the delay which has occurred in its production I may explain that the discrepancy which was found to exist between the population enumerated at the census, and the numbers estimated to be living at the time of the census, was so large as to vitiate such of the deductions in the report as were based on the estimated population. The re-writing of the whole statistical portion of the Report has, consequently, been necessary, and thus I have been unable to present to you the entire work until the present date.

It is a pleasing duty, again to be able to record my obligation to those who have assisted me in my efforts to improve the conditions of life in Salford. I am deeply indebted to the several Editors of the Manchester and Salford Press for the generous help they have rendered during the year, by gratuitously publishing my Weekly and Quarterly Returns. The cause of Public Health owes a debt of gratitude to these public spirited gentlemen, which, in its behalf, I desire thus prominently to acknowledge.

I am, Gentlemen,

Your obedient servant,

JOHN TATHAM.



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I.—PUBLIC HEALTH.

1.—*Health of the Borough of Salford.*

Believing that the completion of a statistical decennium is an appropriate season for reviewing the Sanitary history of the Borough during the period which has intervened between the Census years; the Medical Officer of Health begs respectfully to submit to the Health Committee the following remarks for consideration.

SECTION I.
State of the
Public Health
in 1880.

DECENNIUM 1871-1880.

The year 1880 completes the above mentioned decennium, and the Salford census returns, of which abstracts are given on page 51, furnish the means of arriving at reliable statistical data for the years which have elapsed since the preceding census year of 1871.

Decennium,
1871-80.

The rates of birth and mortality given in the following pages have therefore been carefully revised, and may now be accepted as thoroughly trustworthy.

Previous to the census enumeration just completed, we were necessarily in the dark as to the actual population living at any given period since 1871, and this uncertainty has of course increased in proportion as the enumeration year became more remote. Taking the average of the last five years for instance, the old estimate of the population was found to be so wide of the truth, that the rate of mortality calculated on that estimate was in defect of the rate based on the enumerated population, by nearly six per cent.*

Table A on page 53 gives the earliest available rates of mortality for the Borough, as distinguished from the registration district of Salford. If therefore, the facts of the decennium just closed are compared with those of the six years immediately preceding 1871, it will be found that, disregarding correction for density, which increases the fatality of disease according to a fixed law, the average rate of mortality in the more recent ten years is slightly less than that of the preceding six. If the

* For cause of this discrepancy see page 52.

SECTION I.

Reduced rate of mortality in recent years.

decennium be divided into two unequal periods, in order to compare with the rate of mortality in the earlier years, that of the period which has elapsed since the establishment of the fever hospital,* we find that during the years 1871-76 the mortality was equal to 28·5 per 1000, whereas in the four more recent years (1877-80), it was equal to 27·0—thus showing a reduction of mortality in the more recent period equal to 5·3 per cent. It is interesting to note the variation in the mortality of the different districts of Salford during the ten years now under review :—

Mortality in the several districts of Salford.

	Regent Road.	Greengate.	Pendleton.	Broughton.
First 5 years 1871-75..	30·2	32·1	25·8	19·6
Last 5 years 1876-80..	29·5	30·7	25·0	23·1
Difference per cent. ..	—2·3	—4·4	—3·1	+17·8

It will thus be seen that comparing the first half with the second half of the decennium just completed, we have a decrease in the latter, in the Regent Road district equal to 2·3 per cent., in the Greengate district equal to 4·4 per cent., and in Pendleton equal to 3·1 per cent., whereas in the Broughton registration sub-district the rate of mortality has increased by 17·8 per cent. It is well known that during the last ten years, a considerable exodus of people from the Greengate District has taken place, so many families having been displaced to make room for street improvements. These people, many of whom are amongst the poorest and least healthy of the community, have for the most part taken up their residence in Lower Broughton, and consequently the rate of mortality in that district taken as a whole, has suffered accordingly.

Effect of high Birth-rate on the total mortality.

In the Borough of Salford, the peculiarities noticed in the age distribution of all populations in which a high birth-rate prevails, are strongly marked. In each thousand of the Salford population 142 are found under five years of age, as compared with 98 in a life-table population, from five to twenty years 313 instead of 295, and from 20 to 40 years 331, in place of 295.

Thus in each 1000 of the Salford population 786 are aged less than 40 years in place of 648 in the life-table population, from 40 to 60 years, only 166 are to be found in Salford, instead of 226, and as few as 50 over 60 years of age, instead of 126 in the life-table population.

The proportion of the Salford population living at the ages when the mortality is low, is unusually large, and that of elderly persons who die at an excessive rate is unusually small: hence the normal rate of mortality is only 21·5 per 1000, or 2·8

* The Wilton Fever Hospital was open for the reception of patients, in October, 1876.

below the life-table rate at all ages. This 21·5 per 1000 may be considered the correct standard rate of mortality for Salford, after making due allowance for the disturbing influence of the abnormal age distribution of the population. By reference to the table at foot, it will be seen that the actual mortality among the Salford population during the ten years under review, has averaged 27·9 per 1,000 at all ages, and therefore has exceeded the normal or life-table rate by 30 per cent. Between the ages of five years and forty, the Salford rate of mortality has been almost identical with that of the life-table. It is in early childhood and in extreme old age however, that the injurious effects of living in large manufacturing towns are most perceptible:— Thus the Salford mortality under five years of age has averaged 98·2 per 1,000 living at that age during the last ten years, against 65·7 the life-table rate; and at the age of 60 years and upwards, the rate was 80·6 in Salford as compared with 71·7 the rate of the English life-table.

SECTION I.

Standard rate of mortality in Salford.

Injurious effects of town life most felt at extreme of life.

YEAR 1880.

METEOROLOGY.—The Meteorological conditions of the year 1880 differed materially from those of its predecessor.

The mean temperature of the entire year was 49·3 Fahr., which is higher by 3·5° than that of 1879, and by 0·8° than the average of the mean temperatures of the preceding ten years. The mean temperature at Greenwich was lower than that of Salford by 0·2°.

Rain fell on 214 days of the year, to the aggregate measure of 33 inches, which exceeds by 5½ inches the rainfall of 1879,

	AGES.	English Life Table.	Average 1871-80.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
PERSONS.	All Ages.	21·5	27·9	30·3	25·3	28·3	28·2	29·5	29·5	26·3	27·1	26·7	27·9
	0-5	65·7	98·2	111·5	85·9	96·0	97·0	99·6	102·4	90·7	99·7	92·8	106·6
	5-20	7·1	6·7	7·5	6·0	6·4	7·0	7·4	8·2	5·1	6·3	6·3	7·3
	20-40	10·3	10·9	12·3	10·4	11·2	11·2	11·2	12·3	11·2	9·6	9·7	9·6
	40-60	18·3	26·0	26·1	23·9	27·6	27·7	29·6	26·4	26·6	23·9	25·1	23·5
	60 and upwards ..	71·7	80·6	77·0	78·0	90·6	78·9	91·3	80·4	76·8	77·5	84·7	70·9
MALES.	All Ages.	22·4	30·2	32·4	28·8	30·5	30·4	31·4	31·8	28·8	28·7	29·1	30·3
	0-5	70·1	104·2	115·2	98·5	103·9	99·3	104·1	108·0	95·6	103·5	101·9	112·6
	5-20	7·0	7·0	7·2	6·5	6·8	7·8	7·4	7·8	5·3	6·7	6·6	7·7
	20-40	10·1	11·9	13·0	11·7	11·0	12·5	12·2	14·5	13·6	10·4	9·6	10·9
	40-60	19·4	29·3	29·8	27·4	31·0	32·8	32·3	29·1	31·2	24·9	28·2	26·6
	60 and upwards ..	73·9	86·1	85·4	87·4	96·2	84·0	98·0	84·8	77·0	82·8	92·3	73·4
FEMALES.	All Ages.	20·7	25·9	28·5	22·2	26·4	26·2	27·9	27·4	24·2	25·6	24·5	25·8
	0-5	61·3	92·1	107·6	73·2	88·0	95·3	95·1	96·9	85·1	95·8	83·6	100·5
	5-20	7·2	6·5	7·8	5·6	6·0	6·3	7·3	8·5	5·0	5·8	6·0	6·9
	20-40	10·5	9·9	11·3	9·3	11·2	10·2	10·4	10·3	9·1	8·9	9·8	8·4
	40-60	17·2	23·2	23·0	20·9	24·7	23·3	27·3	24·0	22·7	23·1	22·4	20·9
	60 and upwards ..	69·7	76·7	71·1	71·3	86·8	75·2	86·5	77·2	76·6	73·7	79·3	69·2

SECTION I. but is less by nearly $3\frac{1}{4}$ inches than the average annual rainfall of the preceding ten years.

Meteorology,
March quarter.

The *first quarter* of the year was much warmer than that of 1879. The mean temperature was 41.2 Fahr., which is higher by $4\frac{1}{2}^{\circ}$ than that of the Spring quarter of the preceding year. This difference in temperature was expressed on the death-roll not less faithfully than in the weather-chart. For in Salford alone during the first quarter of 1879, the deaths due to diseases of the lungs numbered not less than 409, whereas in the more genial Spring quarter of 1880 the deaths from this cause did not exceed 269, a difference equal to 34 per cent. The number of days on which rain fell during this quarter was 42, and the amount measured was 5.3 inches. This rainfall is less than the average by 3.2 inches.

June quarter.

The *second quarter* of the year scarcely differed from the average in point of mean temperature, which was 51.9 Fahr. The weather was then, however, much warmer than in the second quarter of 1879, the mean temperature of which did not exceed 48.2. The rainfall, however, was much below the average, which is 7.6 inches; the total amount measured in 56 days of this quarter being only 4.9 inches.

September
quarter.

The *third quarter* of the year was marked by a high mean temperature, and, as a consequence, by an excessive mortality from diarrhoeal diseases, which were proportionally more fatal at this time than at any former corresponding period. The mean temperature during this quarter was 60.7 Fahr., which is the highest mean temperature recorded since 1868, in the autumn quarter of which year it was 61.4° Fahr. This latter period was also marked by excessive diarrhoeal fatality.

Rain fell on 50 days of this quarter, to the aggregate measure of 10.6 inches, which is almost identical with the average rainfall of this quarter during the preceding decade.

December
quarter.

The *fourth quarter* of the year showed a mean temperature of 43.3 Fahr., which differs little from the average. Rain was measured on 66 days of the quarter to the aggregate amount of 12.2 inches, which exceeds by 2 inches the average rainfall in the winter quarter.

YEAR 1880.

METEOROLOGY, BIRTHS, DEATHS, AND MORTALITY FROM CERTAIN PREVALENT DISEASES
IN EACH WEEK OF 1880.

Progressive Number.	Week.	Temperature of the Air.			Air Pressure.	Horizontal Movement of Air in Miles.	Mean Humidity. Complete Saturation = 100.	Rainfall in Inches.	Births.	Deaths at the Ages.				Deaths from								
		Highest during Week.	Lowest during Week.	Mean Temperature.						All Ages.	Under 1 Year.	1 to 5 Years.	Over 60.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Respiratory Diseases.	Phthisis.
	1880.																					
1	Jan. 10	48.2	32.0	40.9	.472	.31	87	..	153	78	21	14	14	..	..	1	..	11	2	1	17	5
2	" 17	43.8	27.0	34.9	1.093	.15	84	.310	142	85	21	21	9	..	1	6	1	8	..	..	19	13
3	" 24	38.0	21.9	31.2	1.322	.21	69	.058	148	85	19	22	13	..	2	2	1	7	..	..	23	10
4	" 31	55.0	24.0	34.0	.294	.56	98	..	147	115	34	26	18	..	1	4	..	15	2	1	24	15
5	Feb. 7	56.0	31.0	43.4	1.136	1.38	91	.378	117	95	26	17	21	..	1	4	..	5	1	1	38	5
6	" 14	49.0	33.0	41.0	1.022	1.23	91	.362	146	91	26	22	14	..	..	2	..	12	3	1	20	10
7	" 21	53.5	37.2	46.2	.888	3.10	85	.700	168	85	22	17	11	..	2	2	..	11	1	2	17	11
8	" 28	51.1	36.0	41.8	1.937	2.23	90	.878	133	77	24	17	5	..	..	3	1	5	4	3	11	14
9	Mar. 6	55.8	34.0	46.4	.998	4.38	92	1.562	132	78	22	22	13	..	2	3	1	10	..	1	20	14
10	" 13	56.1	35.0	44.9	.470	.23	87	.150	166	80	23	20	8	..	1	4	..	9	..	..	19	10
11	" 20	57.8	34.0	43.1	.302	.69	88	..	140	76	19	11	14	..	..	4	..	6	..	1	20	6
12	" 27	58.8	33.0	43.0	.286	.58	75	..	127	79	19	22	7	..	..	7	..	5	..	1	18	14
13	April 3	59.9	32.9	45.1	.898	1.43	82	.892	138	105	21	34	17	..	4	3	..	14	4	1	23	14
14	" 10	55.0	38.0	47.4	1.126	1.27	91	.392	150	84	21	20	7	..	6	7	1	1	1	2	23	12
15	" 17	60.2	35.8	45.0	.252	.65	76	.177	144	81	23	16	10	..	3	5	..	5	1	..	28	8
16	" 24	59.9	40.3	50.2	.448	3.00	79	.183	166	98	21	24	20	..	2	6	1	5	2	..	26	11
17	May 1	63.1	35.0	45.5	1.258	.92	74	.067	123	76	19	22	15	..	2	3	..	5	2	2	19	9
18	" 8	62.2	38.5	48.0	.498	.60	68	..	154	108	24	16	20	..	1	7	..	7	1	3	27	9
19	" 15	65.0	38.2	49.7	.368	1.24	77	.229	142	83	24	23	9	..	4	6	1	6	..	3	15	7
20	" 22	69.0	42.0	53.5	.584	1.08	67	.045	102	106	22	28	10	..	2	11	1	6	3	..	26	10
21	" 29	62.0	43.1	51.9	.736	2.32	73	1.054	162	102	26	24	13	..	3	14	..	3	6	1	21	11
22	June 5	65.8	41.0	52.7	.327	1.60	65	.578	151	75	20	14	7	..	1	4	..	5	..	1	14	11
23	" 12	73.1	42.0	52.0	.472	.85	76	.706	155	70	13	13	9	..	2	5	..	..	1	1	15	13
24	" 19	74.3	51.9	59.2	.546	1.05	76	.658	133	80	15	26	13	..	1	6	..	5	2	2	20	13
25	" 26	74.2	53.8	60.5	.480	.38	76	.208	135	56	11	18	8	..	3	12	2	2	..	1	11	6
26	July 3	73.2	52.0	59.6	.510	1.70	81	.553	145	76	25	20	4	..	4	11	..	6	2	3	14	5
27	" 10	69.0	51.5	58.0	.618	.91	77	1.242	130	89	21	22	9	..	4	6	1	3	1	6	16	16
28	" 17	77.8	51.8	60.2	.168	.42	82	1.691	133	60	17	14	9	..	1	7	..	2	2	3	8	6
29	" 24	71.8	53.1	60.8	.296	.39	76	.526	126	81	26	22	6	..	3	5	..	3	2	11	12	7
30	" 31	72.3	51.0	60.0	.382	1.03	77	1.411	125	80	26	25	7	..	..	10	..	2	1	19	7	4
31	Aug. 7	76.7	51.0	61.9	.530	.70	72	1.565	123	109	39	27	9	..	3	5	..	3	3	29	14	8
32	" 14	81.6	51.2	64.6	.736	.35	71	.050	145	134	52	36	15	..	4	6	2	1	2	39	14	10
33	" 21	76.7	56.1	62.0	.122	.12	73	..	142	118	40	29	12	..	1	3	1	1	1	33	18	9
34	" 28	78.5	57.0	62.6	.336	.12	72	..	133	118	58	21	11	..	1	5	..	4	4	41	11	5
35	Sept. 4	85.3	56.4	66.8	.380	.54	77	.515	146	126	63	36	10	..	1	4	1	1	3	55	9	7
36	" 11	74.8	52.2	62.0	.472	1.02	76	.610	127	140	53	43	7	..	1	7	1	2	5	63	10	9
37	" 18	70.1	51.2	57.2	.618	1.55	76	2.784	138	120	57	33	9	..	..	4	..	2	2	40	12	6
38	" 25	63.6	46.0	55.3	.524	.75	81	.217	136	110	35	34	15	..	1	6	..	..	6	32	10	2
39	Oct. 2	72.3	48.9	58.0	.592	.34	80	.032	124	94	28	24	13	..	..	1	..	1	2	18	15	7
40	" 9	56.6	35.2	48.3	.625	1.55	75	.300	127	113	34	27	13	..	..	6	1	2	11	18	20	12
41	" 16	57.0	41.0	49.2	.296	.31	73	..	141	110	33	29	13	..	4	8	..	2	3	15	18	8
42	" 23	55.4	30.8	42.3	.418	.57	78	.170	127	95	28	27	5	..	3	6	..	..	7	9	12	9
43	" 30	48.7	30.2	40.0	1.414	2.44	83	1.524	110	91	27	27	11	..	4	4	..	..	4	2	33	7
44	Nov. 6	51.1	29.8	40.1	.346	.66	82	.149	150	107	30	25	14	..	9	6	1	..	6	1	37	7
45	" 13	59.2	31.0	46.2	.904	2.16	86	2.110	124	94	29	19	11	..	6	5	1	4	8	3	19	6
46	" 20	56.3	31.5	40.0	1.854	1.02	82	.889	130	88	22	20	14	..	..	8	..	1	2	1	26	10
47	" 27	54.6	20.5	41.0	1.042	2.88	73	.600	117	91	22	13	21	..	5	4	..	3	7	2	30	2
48	Dec. 4	53.0	33.8	47.0	.460	1.07	84	.542	138	81	22	20	16	..	9	3	..	2	2	1	24	5
49	" 11	54.9	41.0	49.1	.632	1.58	75	.389	136	97	26	26	9	..	10	8	..	1	1	2	21	10
50	" 18	49.8	31.0	41.0	1.869	2.18	86	1.048	131	63	12	15	8	..	6	1	2	2	3	..	17	3
51	" 25	50.5	28.0	39.8	.930	1.41	77	3.205	100	69	18	19	8	..	4	4	1	2	2	1	24	7
	1881.																					
52	Jan. 1	49.8	31.0	39.3	1.352	.82	86	1.278	124	97	27	21	19	..	6	5	1	1	2	1	21	9

SECTION I.

State of the
Public Health
in 1880.

Measured by the rate of mortality from all causes, the state of the Public Health in Salford has been less favourable during the year 1880, than in the previous three years. Calculated on the recent census figures, the rate of mortality during the 52 weeks of the year, was 27·9, as compared with 26·3, 27·1, and 26·7, in the years 1877, 1878, and 1879. This excess, however, was largely due to the unusual prevalence of Diarrhœa during the third quarter of the year. Reference to table B on page 56 will show that it is because of the undue fatality of Zymotic diseases (under which class Diarrhœa is included), that the rate of mortality in the year 1880 exceeds that of its two immediate predecessors.

The disproportionate prevalence of infectious diseases during the period of childhood, as compared with other ages, has frequently been remarked upon in these Annual Reports, and this fact has been emphasised by the experience of 1880 even more strikingly than by that of previous years. For, whereas in the ten years 1870-79, the average annual rate of mortality from Zymotic diseases, at ages under five years, did not exceed 35·9 per 1000 children living at that age, the rate was equal to not less than 45·6 per 1000, during the year 1880. Apart, therefore, from other considerations, the mere fact that in large manufacturing communities like our own, children at this early age form so large a proportion of the total population, goes far to explain the relatively greater prevalence of infectious disease amongst us, as compared with populations of a decidedly rural character, the age distribution of which is so notably different.

2. Conditions influencing the Public Health.

SECTION II.

High Birth-rate
in Salford.

The birth-rate of Salford is well known to be continuously high; during the entire decennium, in spite of the commercial depression by which its more recent years have been chequered, the birth-rate has averaged nearly 43 per 1,000. It will presently be explained that this circumstance is one which, irrespective of sanitary condition, *tends to reduce and not to increase* the rate of mortality at all ages. In many populous towns, where the birth-rate is very high, the attempt has been made to explain away the excessive mortality which generally prevails in such places, by the delusive statement that a high birth-rate is the cause of a high death-rate, and, in fact, that the one element controls the other.

To Mr. Humphreys, of the General Register Office, is due the credit of having thoroughly exposed this mischievous fallacy, which could have but one effect on the minds of the Guardians of the Public Health, namely, that of reconciling them to the continuation of rates of mortality, which were in reality excessive, and which they would only tolerate under the belief of their inevitableness, and dependence on conditions which are outside the sphere of sanitary control. In a paper contributed to the Statistical Society, some years since, Mr. Humphreys conclusively showed, that in all those

SECTION II.

Exposure of the fallacy that high Birth-rates are the cause of excessive general mortality.

populations in which high birth-rates prevail, there is an excessive proportion of persons living at ages when the average rate of mortality is low, whereas the proportion of elderly persons among whom the death-rate is naturally very high, is below the average. The effect of a high proportion of young children in a population with a high birth-rate, is more than counter-balanced by the larger proportion of young adults, and the low proportion of persons at more advanced ages. In Mr. Humphreys' paper a very careful explanation is given of his reason for asserting that the death-rate of a population with a high birth-rate should be lower (sanitary conditions being equal) than that of a population amongst whom a low birth-rate prevails.

The English life-table is based upon a theoretically stationary population, that is, one in which the births equal the deaths. In this stationary population, in which, of course, the proportions at each group of ages are normal, the annual death-rate per 1,000 at all ages is equal to 24.5 per 1,000. The death-rate ranges from 7.1 per 1,000 among young persons aged between five years and twenty, to 65.7 among children under five years old, and 71.7 among persons aged 60 years and upwards. If, however, we take 1,000 of the English population as enumerated at the census of 1871, divided proportionately into five groups of ages, and apply the life-table rates at each of these groups, the 1,000 persons will be found to have lost only 22.7 by death during a year, instead of 24.5 the number which would have died in a stationary or life-table population. The principal cause of this is, that whereas in 1,000 of the stationary population there would be 126 persons aged upwards of 60 years, a thousand of the English population actually enumerated in 1871 contained only 75 at these ages, in consequence of the large excess of children and young adults. In certain agricultural counties with an average birth-rate of 30.0 per 1,000, the normal death-rate, calculated according to the life-table mortality at five groups of ages, is nearly 24.0 per 1,000, whereas in the largest English towns in which the birth-rate averages 36.0 per 1,000, the calculated normal death-rate does not exceed 21.7 per 1,000. In Salford the normal rate is 21.5.

The English Life-Table.

Normal rate of Salford mortality.

In the Medical Officer's Report for the year 1879, the attention of the Health Committee was drawn to the more important influences which appeared at the time to affect *injuriously* the public health. In the present report their consideration is asked to such conditions as still continue to influence prejudicially the health and well-being of the people.

Influences injuriously affecting the Public Health.

First and foremost must be mentioned the condition of the air we breathe. Although the atmosphere of Salford, as compared with its condition in former years, is now undoubtedly much purer and freer from irritating substances, still it must be confessed that it has not yet arrived at a reasonable degree of purity.

Atmospheric impurity.

There are two principal agencies at work in contaminating the air of Salford :—

SECTION II.

Organic contamination of atmosphere.

1. Organic contamination, the result of overcrowding;
2. Smoke contamination from factory chimneys.

Organic contamination of the air results from the close aggregation of large numbers of human beings on small ill-drained and filthy areas.* This source of contamination is local in its action, and is by far the most difficult to remedy; in fact, short of wholesale demolition of property, it is difficult to devise means which will be effectual for its prevention.

Factory smoke contamination.

The contamination of the air by factory smoke acts more or less generally over the whole Borough. The Officer of Health has never advised the Health Committee to press for a Utopian degree of freedom from smoke in Salford, but he is convinced by long experience that a state of the atmosphere is quite practicable of attainment, which, for the last ten years, at any rate, has never been even approached.

It has been urged in previous reports, that a very large proportion of the smoke nuisance is wholly preventible, and in support of this assertion the fact has been adduced, that in all cases where the Magistrates have been appealed to for their decision, the offence has been, either that of using furnaces imperfectly constructed, or that of negligently using furnaces which had been fitted with efficient smoke preventers. In fact, that in the terms of the Act "the best practicable and available means had not been taken to remedy the nuisance." The same thing holds true with respect to the year under report; fourteen manufacturers were summoned, and ten were actually fined for using furnaces not so constructed as to burn their own smoke, and thirteen firms or their servants were summoned for negligently using furnaces properly constructed; of these, nine were convicted.

Badly-constructed furnaces.

The Smoke Inspector reports that there are still 155 firms in the Borough which have hitherto failed to adopt the best practicable means for the abatement of the smoke nuisance arising from their respective businesses; and in these cases the Committee would do well to prosecute again and again, if need be, until the offending parties have done what may reasonably be expected of them for the abatement of this most irritating nuisance.

Smoke nuisance from Regent Gas Works.

It is unlikely that any reasonable person will now deny that the presence in the atmosphere of an excessive proportion of smoke is injurious to health. If there is still any doubt on the subject, let reference be made to the table on page 60, which shows how heavily, as compared with other towns, Salford suffers from diseases of the lungs, the organs primarily and most seriously affected by the presence in the air of noxious or irritating substances. Probably, the most constant offenders against the Smoke Bye-laws are the Gas Committee. Repeated admonitions have been addressed to them by the Health Committee, but hitherto without effect. The following special report of the Medical Officer was forwarded to the Gas Committee from this Department during the year 1880:—

* See Medical Officer's Report on the Health of Salford, 1879, page 11.

SECTION II.
Report of Medical Officer of Corporation Gas Works.

“I have to report that on May 6th I paid a visit to the
“Regent Road Gas Works, and found that immense volumes of
“dense black smoke were emitted from the round hole at the
“gable end of the retort house. As this hole is about on a
“level with the windows of the adjacent property, it will be
“easily understood that, in certain directions of the wind, the
“persons living in houses near the Gas Works are well nigh
“suffocated.

“On the occasion to which I refer, the smoke almost hid the
“houses in West Egerton Street from my view, as I looked
“towards them from where I stood within the walls of the Gas
“Works. The smoke appears to be caused in the process of
“firing, immense quantities of it being displaced from each
“retort in the act of charging with fresh coal.

“I am informed, however, that it is possible, by the adoption
“of certain mechanical contrivances, to largely reduce the
“nuisance resulting from gas stoking; and I should be glad, in
“the interests of the residents in the neighbourhood of the
“Regent Road Gas Works, to hear that the Gas Committee had
“adopted some such means for abatement of the nuisance.”

The following table shows the number of Steam Boilers, and
other Furnaces in use within the Borough, together with parti-
culars as to their construction.

Steam boilers
and furnaces—
particulars of
construction.

District.	No. of Firms.	No. of boilers and other furnaces.	Constructed so as to burn their own smoke.	Not constructed so as to burn their own smoke.
Regent Road ..	96	187	108	79
Greengate.....	91	186	80	106
Pendleton.....	66	173	88	85
Broughton	13	23	12	11
Borough totals	266	569	288	281

APPROXIMATE NOMINAL POWER.

Approximate horse-power.

Regent Road District.....	6514 horse-power.
Greengate ,, 	4620 ,,
Pendleton ,, 	5788 ,,
Broughton ,, 	560 ,,
Borough total.....	<u>17482</u> ,,

If all the Boilers in the Borough were working up to their full capacity, Inspector Thompstone states that they could exert a force equal to 52,446 horse-power.

SECTION II.

Non-certified
deaths.

WANT OF MEDICAL AID IN SICKNESS.

NON-CERTIFICATION OF THE CAUSE OF DEATH.

Out of the 4799 persons dying in Salford during the year, 4401 were attended in their last illness by registered Medical Practitioners, 186 were interred by the Coroner's warrant, and 212 persons died without medical attendance of any kind! It is nothing short of a public scandal, that so large a number of persons as this should have had to endure the pangs of sickness, and death, unalleviated by the resources of the physician's art. How much of this suffering might have been spared, how many lives might have been saved, had these poor creatures received that attention in their agony, which medical skill can render?

Out-door medi-
cal relief should
be administered
by Sanitary
Authorities.

To those who are fain to believe that our poor laws provide efficient aid to every poor deserving person in the hour of sickness, it will be somewhat startling to learn that here in Salford, in one year alone, over two hundred of our poor brethren have died, Heaven knows how many more have suffered and pined in our midst, without medical aid or attendance. The treatment of the sick poor at their own homes, is in its very nature a measure of preventive medicine, for the administration of which the antiquated and cumbrous machinery of the Poor Law is utterly unsuited. If instead of being, as at present, the officers of the Guardians, the poor law medical staff were in relation with the Sanitary Authority, their intimate acquaintance with the habits and dwellings of the poor, would in that case make them especially valuable agents in the prevention of disease.

To take another view as to this matter of non certified deaths:—

Cause of uncer-
tified deaths
should be inves-
tigated by medi-
cal expert.

Attention has frequently been directed to the large number of uncertified deaths annually registered in Salford, as offering dangerous facilities for the commission of secret crime. In the absence of a medical certificate, the Registrar is bound to accept the statement of any unskilled person actually present at the decease, as to the cause and fact of death, provided that there is no reason to suspect that violence has been used. In this way, 212 persons, a large proportion of whom were children, are put under the ground, under the sanction of the Law, without inquiry of any kind. There is little doubt, that were the circumstances attending these deaths strictly enquired into by a competent medical expert, on behalf of the Coroner, instances of culpable neglect or of actual crime would frequently be brought to light, which now escape detection.

Relation of coro-
ners' inquests to
non-certifica-
tion of cause of
death.

It has often been pointed out by the Registrar General, and others, that an intimate relation exists between the proportion of inquests held and that of uncertified deaths. In London, during 1880, the proportion of uncertified deaths did not exceed 1·3 of the mortality, but inquests were held in 6·5 per cent. of the deaths; whereas in Salford, the percentage of uncertified deaths was 4·4 per cent., and that of inquests only 3·9 per cent. There remains no doubt that inquests should be

SECTION II.

Uncertified deaths.

held much more frequently than at present in Salford. Whether or not this should be done by the expensive process of Coroners inquiry is not a fit subject for discussion here. The public health interests of the question, however, would be fully satisfied, if the duty of inquiring into the causes of all uncertified deaths were relegated to a skilled medical expert, and the peculiar nature of his other duties points to the Medical Officer of Health as the fittest person for the work.

TABLE I.

CERTIFICATION OF THE CAUSES OF DEATH IN 1880.

	Total Deaths.	Certified by		Not Certified.	Proportion per cent. of Deaths.		
		Registered Medical Practitioners.	Coroner.		Certified by		Not Certified.
					Registered Medical Practitioners.	Coroner.	
Borough of Salford	4799	4401	186	212	91·7	3·9	4·4
Regent Road Reg. Sub. Dist.	2138	1987	64	87	92·9	3·0	4·1
Greengate " "	1074	953	69	52	88·7	6·4	4·9
Pendleton " "	970	890	32	48	91·8	3·3	4·9
Broughton " "	617	571	21	25	92·5	3·4	4·1

INFANTILE NEGLECT IN RELATION TO FEMALE FACTORY LABOUR.

As it is amongst children especially that the consequences of insanitary surroundings are most seriously felt; attention must again be directed to the question of maternal neglect as one of the chief influences injuriously affecting the public health.

Excessive infantile mortality.

In another place the various diseases which have carried off our little children in such undue proportion have been specified in detail, and an endeavour has been made to indicate the diseases which depend for their prevalence and fatality on the neglect to which infants are subjected in consequence of the

SECTION II.

Infantile neglect in connection with factory labour.

industrial occupation of their mothers. It is as well, however, to direct attention here to the great disparity which exists between infant mortality in Salford, and that to which other towns are subject which are more favourably circumstanced with respect to the occupation of child-bearing women. No opportunity should be lost of emphasising with all possible earnestness the evidence which we possess on this point, with a view of awakening public opinion in an adequate degree to a sense of its responsibility in the matter.

The following are the proportions to 1,000 births in which children under one year old die in the whole of England and in each of our large English towns:—

Infantile mortality in large towns of England.

Twenty large towns, 169; Norwich, 214; Birmingham, 172; Manchester, 179; Leeds, 173; London, 158; Plymouth, 188; Leicester, 219; Salford, 198; Sheffield, 164; Brighton, 158; Bristol, 146; Nottingham, 201; Oldham, 180; Hull, 196; Portsmouth, 148; Wolverhampton, 163; Liverpool, 191; Bradford, 174; Sunderland, 170; Newcastle-on-Tyne, 171.

It will thus be seen that with the exception of Leicester, Norwich, and Nottingham, Salford is of all the large English towns, the most fatal to infant life; and that compared with the twenty large towns of England, including the more unhealthy of them, the rate of infantile mortality in Salford is as 118 to 100.

The question for sanitarians obviously is, how are we to stem this terrible sacrifice of human life? It is, of course, beyond doubt that much of our excessive infantile mortality is due to the noxious influences which surround the labouring classes in their homes, and against which they are all but powerless to contend. It is also certain that many infant lives are sacrificed because of the ignorance of the mothers, who, with every good intention, do not know how best to provide for the welfare of their offspring. The sanitary authorities must be looked to for the abatement of the first class of evils, and educational agencies will eventually do much to remove the last. It is of the very nature of these influences, however, that their operation cannot be otherwise than gradual. Meantime the poor little creatures are perishing; in Salford at the rate of 198 for every thousand children brought into the world.

Day nurseries.

The means at our disposal most likely to be successful in diminishing this waste of human life, is the adoption, on something like a sufficiently extensive scale, of the system of day nurseries. We cannot, at present, compel puerperal women to abstain from factory work in order to give the requisite attention to their infants; and it will take many years to induce them to do so spontaneously. But it is not unreasonable to hope that a well directed effort to provide for the adequate supervision and feeding of the children during the working hours of the day, might meet with substantial success. At any rate, it is satisfactory to be able to announce that certain beneficent gentlemen belonging to our Sanitary Association are about to try the experiment of a day nursery in Pendleton. There is little doubt that when the experiment shall have been fairly

Action of Sanitary Association with reference to.

tried, it will be possible to extend the system to other and equally eligible districts of the Borough.

SECTION II.

COLLECTION OF MIDDEN REFUSE.

The attention of the Health Committee is again earnestly requested to the objectionable method still adopted by the scavengers in the collection of midden refuse; namely, that of depositing on the surface of the street, for carting purposes, the contents of the middens in the vicinity. The object of this slovenly arrangement is doubtless the saving of time and expense, but the fæcal contamination of the street surface which it involves is seriously objectionable, and ought to lead to the discontinuance of this practice.

Excrement disposal—faulty system.

One of the main sanitary objections to the use of midden closets, consists in the nuisance generated in the act of emptying. Inasmuch therefore, as there seems little present hope that the midden system will be discontinued in Salford; it behoves the Health Committee to see that the scavengers do all in their power to minimise the nuisance to which the process gives rise. In a former report it was suggested that instead of tipping the midden refuse upon the surface of the streets at the passage ends, the scavengers should be supplied with suitable boxes or tubs rolling on wheels, into which the refuse should be shot direct from the middens, and out of which it should be discharged into a low scavenging cart standing conveniently for the purpose. This would of course involve the employment of some additional horses and men, but a very serious nuisance would thereby be obviated. As a question, therefore, seriously affecting the public health, the Medical Officer would express the hope that the Health Committee will give early consideration to this suggestion.

Nuisance from emptying of middens.

Suggestions for remedying.

WANT OF PUBLIC BATHS FOR THE PEOPLE.

It is very necessary that some better means should be available for personal ablution and cleanliness than are to be found in the houses of the poor, or even in those of the average working man. The Salford Corporation have perhaps never initiated an undertaking more certain to be followed by good hygienic results, than that of providing public baths for the people. The only fault to be found with the scheme is that it is not sufficiently extensive. It is obviously futile to hope for favourable results from any measure of public health, unless that measure be adequate in proportion to the mischief it is intended to overcome. In these days of retrenchment, it is probably difficult to obtain the necessary consent for the expenditure of public money, but the experience of the Baths Committee has proved that the scheme is almost, if not entirely, self-supporting. But even in the event that further and more extended trial should fail to confirm past experience as to the financial success of the undertaking, the Corporation may rest assured that there is no object upon which the ratepayers'

Corporation baths.

SECTION II.
Financial result
of undertaking.

money can be more advantageously contributed in the interest of public health, than in the adequate extension of a scheme for the diffusion of the means of cleanliness amongst the working classes.

The Baths Committee may justly point with pride to the success of the Blackfriars Baths, as a refutation of the oft times uttered prediction of the economists, that the people would not avail themselves of the Baths. The Officer of Health is indebted to Mr. Alderman Bailey, the Chairman of that Committee for the following return, which furnishes conclusive evidence that our poor people really wish to be clean, and heartily appreciate the bath accommodation which the Corporation have placed at their disposal.

CORPORATION BATHS, BLACKFRIARS STREET.

Statement of number of Bathers from June 10th, 1880, to October 31st, 1881. (The period during which the Baths have been open).

Males.....	126,515	} Total 131,641
Females.....	5,126	
Total receipts from Bathers from opening, up to 31st October, 1881.		} £1625 13 8

(Signed), R. W. WHITEHEAD,
Superintendent.

FLOODS IN BROUGHTON AND GREENGATE.

Periodical over-
flowing of
Irwell.

During the year 1880, as in previous years, the overflowing of the Irwell has given rise to much discomfort in those parts of Lower Broughton and the Adelphi which border on the river. This continuous flooding of the low-lying districts of the Borough cannot be otherwise than injurious to health. It is satisfactory, therefore, to note that the subject is receiving the best attention of the River Conservancy Committee, with a view to the prevention of floods in the future.

Districts chiefly
inundated.

On the 23rd of December last, the Officer of Health reported the occurrence of a flood arising from an overflow of the river. The neighbourhood specially affected was thus bounded:— From the lower side of Broughton-road, along Great Clowes-street, to Clarence-street, thence across the district the whole length of Clarence-street to Milton-street, thence upwards to Broughton-lane and Edward-street, and thence onwards by way of Sunnyside to Broughton-road again. The grids in this district were opened, and quantities of water escaped by this means into the intercepting sewer, but in Great Clowes Street the water seemed to force its way back through the grids into the street and houses. There were 12 houses in Sunnyside the cellars of which were full of water and filthy sludge. In the Adelphi the water was several feet deep in the cellars of most of the houses, and the following streets were flooded:— Blackburn Street (slightly), Pine Street, Flax Street, Cotton Street, North Dyer Street, Hall Street, bottom of Arlington

SECTION II.

Street, North James Henry Street, Ann Street, Cliburn Street, Diamond Street, Leicester Street, and the bottom end of Silk Street, adjoining the end of Broughton Road.

PUBLIC MORTUARIES.

It is unfortunate that the Corporation have not hitherto seen fit to erect one or more suitable mortuaries in the Borough. It surely must be evident, at least to those who know anything of the poor, that the dwellings in which they live, close and confined as they commonly are, are anything but fit or decent resting places for the dead. At least one building might be provided, say in one or other of the poorer neighbourhoods of the Borough, where the home conveniencies are of the most meagre description. There is no need that the structure should be a costly one. It should consist of three rooms—one for the deposit of the dead in their coffins, another for the holding of post mortem examinations when necessary, and the third for the use of the Coroner and his jury. If the Corporation would undertake to adopt this suggestion, there is little doubt that the fees now paid for the use of an inquest room in a public-house would be available towards the support of the new mortuary apartments, and the Coroner would doubtless appreciate the increased facilities which such an arrangement would afford for the decent execution of his office.

Mortuary accommodation

3 to 7. *Preventible Disease : Its Causes, Origin and Distribution.*

During the year 1880, preventible diseases, and especially those of an infectious nature, were much more fatal than they had been for several years previously. Under present circumstances, it is as well to say plainly that it is of comparatively little use for the inspectors to endeavour to cope with infectious disease, relying solely on the information they can obtain from the public and the medical profession. It is true that the department has been favoured in numerous instances with notifications of infectious cases by the medical officers of the Salford Hospital and the Pendlebury Hospital and Dispensary, and the information thus obtained has been utilized to the fullest extent, but the sickness attended by the staff of these institutions forms but a small percentage of the infectious disease which seems constantly to run riot amongst us.

SECTION III
Preventible diseases.

The Medical Officer of Health desires therefore to emphasise his previously uttered conviction, that in order to hold infectious disease in ever reasonable check, one of two things is imperatively necessary—either compulsory powers for the notification of infectious disease, or an enormous increment of the inspecting staff—so that at least certain districts of the borough may be constantly subjected to a system of methodical house to house visitation. The latter alternative seems scarcely justifiable, but the proposal to insist upon the notification of infectious disease is so reasonable and just, and the expense to the ratepayers

Urgent need of powers for compulsory notification of infectious diseases.

SECTION IV.

Infectious
disease.

would be so trifling, that it is nothing less than a calamity that we do not possess the power indicated.

The Corporation have liberally provided efficient hospital provision for the isolation of infectious disease, and yet it has seldom been utilized, except to accomodate either workhouse or dispensary cases, or such private patients as have been found unremunerative or troublesome by medical practitioners. From the data thus recorded during the year 1880, it is easy to calculate that there must have been about 4,000 cases of dangerous infectious diseases in Salford, exclusive of measles and whooping-cough, and yet only 10 per cent. of these cases were sent to Wilton Hospital,—a proportion utterly insufficient to affect the spread of disease.

Relation of Ele-
mentary Schools
to

In the preceding Annual Report, reference was made to the fact that our Elementary Schools are frequently the agents of the spread of infectious disease. Since the issue of that document the Medical Officer has been in frequent communication with the school-masters and mistresses of the borough on the subject of infectious disease. He has invariably given warning to them by letter, whenever the Inspectors have discovered communicable disease to exist amongst the families of school-going children, and he very thankfully acknowledges the receipt of much valuable and cheerfully rendered assistance from those engaged in tuition in Salford. The Medical Officer of Health desires to intimate that he will be obliged for prompt information respecting the absence of any child from school, from whatever cause. The Inspector will in such cases ascertain whether or not the absence is due to infectious sickness, and notify the teacher accordingly. In the interest of the public health and especially of the schools themselves, it is much to be desired that when the absence of a child from school is caused by infectious sickness at home, such absence should entail loss, neither to the teachers nor to the managers of the school. The Medical Officer very respectfully commends this suggestion to the notice of Her Majesty's Inspector of schools for this district.

SECTION VII.

Scarlet Fever.

Scarlet Fever.—It has been before mentioned that Salford is never entirely free from scarlet fever; the disease, however, varies very much at different seasons of the year, and in different years, both as to the numerical prevalence of the cases and as to their severity. The Health Committee has been kept informed from time to time when the disease has been prevalent in any locality, and also as to the measures taken by the Department for its suppression.

Pendleton epi-
demic in March.

In March last the Medical Officer of Health had to report that scarlet fever was threatening to become very prevalent in Pendleton. There were at that time no less than eight cases in one row of property. At No. 7, Thomas Street, Brindle Heath, there were two cases; at No. 41 three cases and one death; and at No. 55 there were also three cases and one death. The tenants of Nos. 7 and 55 being police officers, the Chief Constable was communicated with, in order to prevent these officers from associating with their fellows. Opposite these houses in

SECTION VII.

Scarlet Fever
epidemic in Pen-
dleton.

Thomas Street is a strip of waste land, upon which, from time to time, offensive matters have been tipped. There were also several pools of water standing on this land of a very offensive character. The Committee ordered the whole of this solid and liquid filth to be removed with all dispatch, and this was accordingly done. In the case of Thomas Street, as in many other cases, the Medical Officer had to remonstrate strongly with the tenants for their carelessness in exposing themselves and their neighbours to infection. The people live in the houses of their neighbours almost as much as in their own; and the fact that a case of infectious disease exists in a house, is a signal for every prattling housewife in the street to pay the infected premises a visit. Under these circumstances there is no wonder that such an infectious disease as scarlet fever is never absent from amongst us.

It is satisfactory to note that the prompt action of the sanitary inspectors, aided to some extent by information from the medical attendant, was successful in checking the spread of the disease in this locality, although we were unsuccessful in obtaining the removal of the cases to hospital.

Scarlet Fever
epidemic in Re-
gent Road.

In June last the Medical Officer reported that a somewhat sharp epidemic of scarlet fever had occurred in the neighbourhood of Regent Road. The epidemic was marked by unusual fatality, a large number of deaths having been caused by the disease. The service of the inspecting and disinfecting staff were called into urgent requisition, and with a view of keeping abreast of the house disinfection, the Medical Officer found it necessary to temporarily increase the staff of limewashers. He also placarded with large posters the neighbourhoods where the incidence of the disease had been the heaviest. The following is the text of one of these documents:—

SCARLET FEVER.

WARNING BY THE MEDICAL OFFICER OF HEALTH.

The Medical Officer of Health gives warning that Scarlet Fever is still spreading in this street and in this neighbourhood. The following suggestions are offered by the Medical Officer of Health with a view to check the spread of the disease:—

Circular issued
by Medical
Officer.

1. If you have any one ill of scarlet fever in your house, take care that none of your neighbours come in to it.

2. If your house is free from scarlet fever, be careful not to visit your neighbours who have it; if you do, you are almost sure to bring the disease home with you.

3. If scarlet fever has visited your house call in a medical man, but avoid quacks and other irregular practitioners.

4. Give notice at once to the Medical Officer of Health, at the Town Hall, Salford; who will give you all the help in his power by disinfecting your house, and removing whatever may be injurious to health.

SECTION VII.

Scarlet Fever.

5. Keep the sick members of your family in a room by themselves; if this cannot be done, it is far better to remove them at once to the Hospital, so that your house may be properly disinfected, and thus, the extension of the disease to other members of your family may be prevented.

6. Practice cleanliness, and use plenty of Carbolic Soap which you may have gratis from the Sanitary Inspector, who will call for the purpose of supplying you.

7. When you remove soiled sheets or blankets from a patient, put them at once into water mixed with Carbolic Acid, which the Inspector will supply to you free of charge.

8. Burn all soiled rags which have been used by the patient.

9. On no account allow a patient recovering from scarlet fever to leave your house until his medical attendant gives him permission; otherwise you may be the means of spreading the disease, and the consequences to the patient may be fatal.

(Signed), JOHN TATHAM, M.D.,

Medical Officer of Health.

Small-pox in
Salford.
Sporadic cases.

Small-pox.—Notwithstanding that small-pox was so fatally prevalent in London last year, the disease never became epidemic in Salford, although cases occurred sporadically in the Borough from time to time during the year.

On the 9th June, 1880, the Medical Officer of Health reported that two cases of small-pox had occurred within the Borough. One in Enbridge Street, the other in West Worsley Street. The patient at the former address was a soilder, who had only recently returned from Africa; happily the disease did not spread from this case. There were two children in this house, relatives of the patient. *They were both successfully vaccinated in infancy, and consequently have escaped infection.* The patient at West Worsley Street, was an unvaccinated child six years old. In this house there were three children the eldest of whom is working in Chester Road, Hulme, and the other two children have been removed to Park Place, Cross Lane. The Medical Officer of Health has strongly urged that all the children in these houses should be vaccinated, and in the case of the two last mentioned he believes that this has been done. No fresh cases of small-pox were heard of from this date until September 30th, when two cases were reported at a house in Melbourne-terrace, Windsor-bridge, and as the disease was known to be prevalent in districts just outside the borough, the Medical Officer of Health issued hand-bills and posters, of which the following is a copy:—

VACCINATION AND RE-VACCINATION.

Circular of Medical Officer as to Vaccination.

The Medical Officer of Health desires to call public attention to the prevalence of small-pox in districts just outside Salford, as well as in London, in which city during the last three months 944 deaths have been caused by it.

1850-51.



SECTION VII.

Small-pox in Salford.

Although, happily, only a few cases have hitherto occurred in our own borough, it is much to be feared that we may yet be visited by this dreadful disease, which during the last epidemic (1876-77) killed in Salford alone, no less than 472 persons, most of whom would probably have been alive at this date had they been properly protected by vaccination.

Thorough vaccination in infancy, and re-vaccination after the age of 15 years, afford an almost absolute protection against death from small-pox.

Notwithstanding the terrible lessons which we ought to have learned from our past experience of small-pox fatality, there still remains a very large proportion of un-vaccinated infants in Salford, which would become a source of public danger, in case small-pox again became epidemic amongst us. Re-vaccination in Salford is scarcely ever thought of, although it is well known that the protective influence of Vaccination requires renewal after the 15th year.

When re-vaccination has once been effectually performed it does not require repetition. The Medical Officer of Health earnestly entreats those who value their own lives, or the lives of their children, to promptly secure the vaccination or the re-vaccination of themselves and their families.

It is foolish to wait until small-pox becomes epidemic amongst us, for then the public vaccinators will be quite unable to meet the unusual demand for the necessary Lymph.

(Signed) JOHN TATHAM, M.D.,
Medical Officer of Health.

SPECIAL REPORT ON THE TYPHUS EPIDEMIC OF 1880.

About the end of March, 1880, a patient ill of typhus fever was imported into Salford. The case, however, was not reported to the Health Department at the time. The disease consequently soon began to spread, and in May last it assumed alarming proportions.

Typhus Epidemic.

The object of the present Report is to show how far the Department has been successful in tracing the spread of infection from house to house, and also to indicate some of the difficulties which have beset the Inspectors, in their endeavours to stamp out the epidemic.

In order the more clearly to identify the localities invaded by the disease, a chart has been prepared to accompany this Report, upon which are marked with a red cross the streets in which the typhus cases occurred. It will thus be seen that the incidence of the disease was localized mainly in four districts, which are separated from one another by considerable distances; the cases of typhus have therefore been arranged, as far as possible, in a corresponding number of groups, in order that the spread of the disease from house to house may the more readily be traced. There are, however, several cases outside

Chart showing incidence of the cases.

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these groups, which, as to their source, have baffled all efforts at investigation. These sporadic cases will find a place in a separate list.

Social condition
of Patients.

With the exception of a few artizans and their families, the people who were the subjects of typhus were of the poorest possible class. But the inhabitants of the neighbourhood known as the "Battery" require separate mention here, inasmuch as they were very troublesome, and called for the special attention and aid of this Department during the epidemic.

It is difficult to give a description in words, which shall convey to a stranger an adequate idea of the manner in which these poor people pass their lives. They are so irregular and migratory in their habits, that they cannot be said to have any settled residence:—Crouched up in the corners of rooms for warmth, with nothing better for a bed than straw, or filthy flocks; these poor wretches lay half-naked on the floor, in a condition piteous to behold.

For the most part, there seemed to be no distinction of sex or even of family, as regards their distribution in the sleeping rooms. Husbands and wives, lodgers and tenants of both sexes lay huddled together on a common litter, in a state of filth which may truthfully be described as bestial.* Under circumstances like these, there is little wonder that the poor creatures fell an easy prey to typhus, or that when once the disease had obtained a foothold amongst them, it spread with such alarming rapidity.

GROUP I.

March, 1880.

5, *Elizabeth Street, Oldfield Road*.—About Easter week, 1880, a case of typhus fever occurred at this address. The patient, Chas. W., aged eight years, was nursed by his mother, who thus contracted the disease; but in neither case was the Health Department informed or consulted. Both of these patients recovered. Subsequently, the boy's father took the disease:—This man was removed to Wilton Hospital on the 5th, and on the same day Richard S. was removed, also suffering from typhus; both of these patients recovered; the house was properly cleansed and disinfected.† From this house infection seems to have been carried to 40, Essex Street by a friend who was a frequent visitor at both houses.

May 13, 1880.

40, *Essex Street*.—Mrs. R., who spent much of her time at the last-mentioned house (5, Elizabeth Street), and there attended upon Mrs. W. whilst ill of typhus, evidently brought infection to this house, for she was related to these people, and was a frequent visitor here from Elizabeth Street, which is close by (see chart). The first case at this house was that of a lad,

* The Medical Officer of Health was a frequent witness of this state of things when paying his midnight visits to this wretched neighbourhood of the "Battery" during the epidemic.

† N.B.—In every case of typhus the house was dressed from top to bottom with caustic soda, and the walls were stripped. The bedding was also either stoved or destroyed;—usually the latter.

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J. F., aged 12 years, whose illness was not reported to the Health Office until after he had infected his mother and two sisters. On the 13th of May, all three of these patients were sent to Wilton Hospital, and on the 19th, the father, aged 40, was also removed. The mother, father, and the eldest child died; the youngest child was discharged cured.

30, *Crookell Street*.—On the 16th May, Alice L., aged 30, was removed to Wilton Hospital from this address, having been taken ill of typhus a few days previously. The people were very poor and evidently in want, and the rooms were overcrowded. The patient recovered. May 16, 1880.

45, *Regent Street*.—On the 1st of June, Matthew K., aged 9 years, was removed to Wilton Hospital, where he recovered. Source of infection unknown. June 1, 1880.

49, *Regent Street*.—A case of sickness occurred at this address, which commenced about the same date as the last-mentioned case, but was not reported to us. The case was almost certainly one of typhus, but the patient was not removed to hospital. Both of these patients probably contracted fever by playing with the children at 5, Elizabeth-street.

9, *Seddon Street*.—On the 24th June, a case occurred here, which was certified to be typhus; the patient, Elizabeth T., aged about 40 years, was under private medical care, and, therefore, was not removed to hospital. June 24, 1880.

19, *Chadwick Street*.—A case of typhus (H. B., aged 50) occurred at this address on the 26th July, but, as in the immediately preceding case, and for the same reason, the patient was not removed to hospital. July 26, 1880.

56, *West Fleet Street*.—On January 19th, 1881, John M., aged 24, was removed to Monsal. He recovered, but the source from which he was infected was never discovered. Jan. 19, 1881.

66, *Regent Street*.—On the 16th of May, Elizabeth A., aged 55 years, was removed to Wilton Hospital from this address, and died five days subsequently of well marked typhus. She is reported to have come to this house from the "Battery," at which place the disease was prevalent at the time. May 16, 1881.

55, *West Union Street*.—On the 12th of January, 1881, Frances G., aged 11 years, was removed to Wilton Hospital from here. She recovered, but the source of contagion in her case was never discovered. Jan. 12, 1881.

GROUP 2.

4, *Turnerson Street*.—The first case in this block occurred on the 16th of May. The patient, Ann T., aged 40 years, together with her husband and family, were in a wretched condition of poverty, the bedding being scanty and very filthy. This woman was removed to hospital on the 17th of May, and died on the 22nd. May 17, 1880.

9, *Turnerson Street*.—Mary F., aged 39 years, was removed to hospital on the 19th of May. She recovered. May 19, 1880.

6, *Turnerson Street*.—On the 29th of May, Joseph T., a boy 14 years old, and on the 1st of June, Margaret T., his mother, aged 44 May 29, 1880.

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years, were removed to hospital. Both these patients recovered. The residents in the last three houses were evidently on friendly terms, and the disease was probably communicated by the people, one to the other.

Aug. 21, 1880.

5, Hulton Street.—The first case at this house was that of G. H., aged 8 years, who sickened about the 1st of July. The residents at 37 Hulton-street were constant visitors here at this time and afterwards. The case of G. H. was succeeded by that of his father, James H., who was removed to Monsall Hospital from Manchester, whither he had gone to work about the end of July; and on the 21st of August Jessie C., aged 13 years, was removed from here to the Hospital,—the disease being now for the first time discovered to be true typhus. This patient recovered. The bedding was removed to Wilton Hospital and stoved, and the whole house was stripped and dressed with caustic soda on three separate occasions.

Sept. 3, 1880.

On September 3rd, Ann C, aged 35, and Albert H., aged 27, a lodger: and, on the 12th of September, William C., aged 38, were removed to the typhus ward from this house. The bedding was again stoved, and the house dressed throughout with caustic soda on September 20th. Altogether four cases of typhus occurred at this house; all these patients recovered.

July 15, 1880.

37, Hulton Street.—Mary R., aged 24 years, caught typhus by visiting at No. 5 in this street—the house in which four cases occurred. She was removed to Monsal Hospital on the 15th of July, and Annie P., her sister, aged 13 years, who lived with her, was taken ill and removed on the 19th of August. Both these patients recovered.

Aug. 19, 1880.

Aug. 17, 1880.

21, South Short Street.—Two young women, Mary B., aged 18, and Eliza B., aged 25, were removed to Monsal on the 17th of August from this address, the disease having been imported from 19, Chadwick-street (Group 1.) Both these patients recovered. The people living in the last six infected houses appear to have been on friendly terms, and to have visited each other very frequently, and thus the disease hung about this neighbourhood from May until September.

GROUP 3.

Sep. 7, 1880.

7, North Street.—The first cases which occurred in this house were those of Mrs. J. and her daughter, who were taken ill some time in August, probably of typhus; but we had no information of the fact until the husband, James J., was taken ill and removed to Monsal on the 7th of September, with unquestionable typhus. This house was thoroughly dressed with caustic soda immediately after the removal of the patient, and the whole of the bedding was destroyed. James J. subsequently recovered.

Oct. 6, 1880.

27, Muslinet Street.—The first case commenced here about the end of September, but no report was made to this office until October 6th, when the following five typhus cases were removed to Monsal—namely:—Thomas P., aged 32; Eliza P.,

SECTION VII

aged 28; Stephen P., aged 10; Elizabeth P., aged 8; and Ada J., a lodger, aged 16; the first and last of these patients died at Monsal, the rest recovered. There is no doubt that the infection was brought to this house from 7, North Street,—for between these two families there was constant inter-communication, as the mother of James J., of 7, North Street, was the head of the house at the present address, and the wife of James J. was also frequently present here.

15, *North Street*.—On the 17th of August, Robert S., aged 25 years, was removed to Monsal from this house, which, being next door to No. 13, inter-communication probably existed between the people. This patient recovered. Aug. 17, 1880.

13, *North Street*.—On the 7th of September, Thomas B., aged 42 years, was removed to Monsal, suffering from typhus, and died there three days after admission. Martha B., aged 6 years, daughter of the last-mentioned patient, was also removed on the same day, and she recovered. In this case there was no proof that the disease was brought from No. 7, North Street, but there is a strong probability that this was so, having regard to the habits of the people. This house was also disinfected and the bedding destroyed immediately on the removal of the two patients to the Hospital. Sep. 7, 1880.

4, *Canal Bank*.—Robert C., aged 32, and Alice C., aged 12, father and daughter, were removed to Monsal on October 1st. The former was known to be a constant companion of James W., of 1, Edith Street, who was removed to the typhus wards on the 8th of September, having been ill about nine days. The father died, but the daughter recovered. This house was disinfected as usual, and the bedding destroyed or stoved. Oct. 1, 1880.

5, *West Elizabeth Street*.—Mary A. H., aged 12 years, was removed from here to Monsal, on the 6th of October. This girl, who subsequently recovered, was a near relative of the tenants at 1, Edith Street, and was frequently present at that house, where she probably caught the infection. Oct. 6, 1880.

11, *Pike Street*.—On the 8th of October, Elizabeth D., aged 18 years, died at this house of “fever.” The case was not reported to us until after death, but the patient is supposed to have taken the disease by visiting at No. 7, North Street. On the 16th of October, Elizabeth D., aged 52 years, mother of the before-mentioned patient, was removed to Monsal, from this house, and died three days after admission. She was infected by nursing her daughter, who died at home on the 8th, under private medical care. Oct. 16, 1880.

GROUP 4.

1, *Edith Street*.—On August 5th, Alice and William H., aged 38 and 4 years respectively, mother and son, were removed to Monsal from this house. They both recovered and were returned to the workhouse. From the same house James B., aged 41 years, a lodger, who had been taken in for charity, was removed to Monsal on the 31st of August, and died there September 4th. On September 8th, James W., aged 37 years, Aug. 5, 1880.
Aug. 31, 1880.
Sep. 8, 1880.

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and George W., aged 9 years, father and son, were removed to Monsal from this house. They both recovered. These two patients were clearly infected by contact with James B., the lodger previously referred to.

Oct. 4, 1880.

6, *Edith Street*.—On the 4th of October, William J., aged 42, was removed to Monsal from here, and was discharged cured on the 20th of October. On the 1st of November, Ellen H.

Nov. 1, 1880.

and Margaret B., aged respectively 35 and 27 years, were removed from this address suffering from bad typhus. The former of these died, the latter recovered. On the 14th of

Feb. 14, 1881.

February, Kate B., aged 5 years, was removed from here to Wilton Hospital with well marked typhus rash on admission. She died three days subsequently. On the 18th of February,

Feb. 18, 1881.

James B., aged 28 years, father of the last patient, was removed to Wilton Hospital. He recovered.

59, *Duncan Street*.—Early in October a case of fever, that of Sarah C., aged 57, occurred at this house, but was not reported to us until it terminated fatally on the 27th. This woman was nursed by Margaret B., of 6, Edith Street, who afterwards contracted typhus, and was removed to Monsal on November 1st. On November 3, Lucy C., aged 28 years, who also attended on Sarah C., deceased, was removed to Monsal; and on the 12th of November, James S., her brother, aged 30 years, was also removed.* Both these patients recovered. This house was several times disinfected, and was dressed throughout with caustic soda immediately after the removal of Lucy C., and again after that of James S., a lot of bedding being removed and destroyed on both occasions.

Nov. 3, 1880.

Nov. 12, 1880.

Nov. 2, 1880.

4, *Comus Street*.—On the 2nd of November, 1880, Samuel C., aged 34 years, was removed to Monsal Hospital. The wife of this man, who had recently recovered from fever, was in the constant habit of visiting both of the previously mentioned houses, and occasionally actually lived at 59, Duncan Street. As this woman was convalescing, the above-mentioned S. C. was taken ill—the wife having evidently infected the husband; on November 4th, Mary P., the mother of the above-mentioned Samuel C., who shared the same bed with him and his wife was also removed to Monsal Hospital. Both of these patients recovered. The house was subsequently dressed with caustic soda from top to bottom, and the straw, which had served for bedding, was destroyed.

Nov. 4, 1880.

Nov. 7, 1880.

12, *Providence Street*.—November 7th, Margaret C., aged 9 years, was removed to Monsal, ill of typhus, from this address, and was discharged cured on the 18th of December.

Dec. 8, 1880.

4, *John Wood Street*.—December 8th, Abigail B., aged 43 years, and John B., aged 16 years, were removed to Monsal suffering from typhus. They both recovered.

Dec. 9, 1880.

5, *John Wood Street*.—December 9th, Mary G., aged 9 years, was removed to Monsal, ill of typhus; she returned cured on the

* The symptoms in this case were ambiguous, so that the medical attendant was not certain that the case was one of true typhus.

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27th of December. On the 29th of December, Margaret S., aged 23, was removed from the same address. She died of typhus at Monsal on the 12th of January, 1881. Dec. 29, 1880.

22, *Edith Street*.—January 3rd, 1881, Catherine M., aged 50 years, was removed to Monsal suffering from typhus. She recovered. January 6th, Mary B., aged 9 years, was removed to Monsal suffering from the same disease. She also recovered; and on the 22nd May, Mary B., aged 27 years, mother of the last patient, was removed to Monsal. She likewise recovered. Jan. 3, 1881. Jan. 6, 1881. May 22, 1881.

126, *Regent Road*.—January 4th, Henry C., aged 24 years, was removed to Monsal from this address, and died of typhus on the 16th. Jan. 4, 1881.

10, *John Wood Street*.—January 22nd, 1881, William M., aged 50, was removed to Monsal from this address, and died of typhus on the following day. Jan. 22, 1881.

20, *Providence Street*.—January 27th, Mary P., aged 17 years, was removed to Wilton Hospital from this address. January 29th, Sarah P., aged 7 years, sister of the above, was removed to Wilton Hospital. February 21st, Thomas P., aged 14 years, brother of the above, was removed to Wilton Hospital. Jan. 27, 1881. Jan. 29, 1881. Feb. 21, 1881.

16, *Edith Street*.—January 29th, Elizabeth S., aged 16 years, was removed to Wilton Hospital. Jan. 29, 1881.

12, *Edith Street*.—February 1st, Catherine M., aged 9 years, was removed to Wilton Hospital. Feb. 1, 1881.

63, *Duncan Street*.—February 19th, James D., aged 18 years, was removed to Wilton Hospital. Feb. 19, 1881.

22, *Providence Street*.—February 24th, Mary M., aged 27 years, was removed to Wilton Hospital. Feb. 24, 1881.

19, *Providence Street*.—February 24th, John K., aged 33 years, was removed to Wilton Hospital. Feb. 24, 1881.

7, *Providence Street*.—March 1st, Robert M., aged 12 years, was removed to Wilton Hospital. March 1, 1881.

7, *John Wood Street*.—March 14th, Catherine M., aged 55 years, was removed to Wilton Hospital. March 14, 1881.

17, *Edith Street*.—May 27th, James R., aged 11 years was removed to Wilton Hospital. May 30th, Sarah R., aged 8 years, was also removed to Wilton Hospital. The twelve last-mentioned patients all recovered. May 27, 1881.

SPORADIC CASES.

28, *Percy Street, Pendleton*.*—On February 21st, 1880, Thomas M., aged 17 years was removed to Wilton Hospital suffering from typhus. He recovered from the fever, but developed phthisis and died of the latter disease on April 30th. Feb. 21, 1880.

4, *Wroe Street, Barrow Street, Salford*.—On April 13th, Julia P., aged 35 years, was removed to Wilton Hospital. She recovered. April 13, 1880.

19, *Cambridge Place*.—On the 8th of May, John and Sarah B., aged respectively 34 and 33 years, were removed from this May 8, 1880.

* The cases marked with an asterisk are outside the boundaries of the chart.

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address to Wilton Hospital. This was the first case of typhus in the neighbourhood, and was probably imported from Birmingham, from which place the father had lately returned in a state of great destitution. The man died in the hospital, but the woman recovered.

- June 24, 1880. *30, New Cambridge Street.*—From 19, Cambridge Place, infection was probably carried to this house in the person of Robert B., aged 5 years, the son of the last two-mentioned patients. This child had been sent to the present address on the removal of his parents to hospital. He was attended at home, and was not removed to Wilton House; consequently another case occurred at this address, namely, that of Mary W., aged 30 years, who was removed to hospital on June 24th, and died there on the 30th.
- June 10, 1880. *36, Croydon Street.*—Sarah C., aged 30 years, a lodger, was reported ill of typhus on the 10th of June. The infection was taken from 6, Turnerson Street, where she had been present at the burial of Alexander T., a typhus patient. In the absence of the tenant of the house, and evidently under the influence of maniacal excitement caused by the fever, this poor creature effected her escape from the house, and threw herself into the river,—whence she was rescued by the police, who brought her to the hospital. The case turned out to be a severe one of typhus, but the woman eventually recovered.
- June 19, 1880. *Workhouse.**—On June 19th, Emma J., aged 30 years, was removed from this establishment to Wilton Hospital, and died there of bad typhus on June 28th.
- July 8, 1880. *45, Zebra Street.*—On the 8th of July Ellen S., aged 30 years, was removed to Wilton Hospital from this address. This patient recovered.
- Aug. 13, 1880. *1, Pilgrim Street.*—On the 13th of August, Elizabeth G., aged 26 years, was removed to Monsal Hospital. She recovered.
- Sept. 19, 1880. *14, Leaf Square, Pendleton.**—Margaret W., aged 36 years, a servant, was removed from this address to Wilton Hospital on the 19th of September, and died of typhus on the 22nd.
- October 8, 1880. *56, Corporation Street, Salford.**—October 8th, Joseph R., aged 10 years, was removed to Monsal Hospital. He recovered.
- Oct. 25, 1880. *14, Ernest Street.*—Mary H., aged 30 years, was removed to Monsal, suffering from typhus, on the 25th of October. She recovered.
- Nov. 3, 1880. *2, Grey's Place, Dyer Street, Salford.*—On November 3rd, Harry J., aged 17 years, was removed to Monsal. He recovered.
- Nov. 5, 1880. *9, West Stanley Street.*—On the 5th of November, Eliza L., aged 28 years, was removed to Monsal, and recovered.
- Nov. 11, 1880. *31, Dawson's Croft, Greengate.**—On November 11th, Patrick M., aged 21 years, was sent to Monsal, and recovered.
- Nov. 17, 1880. *30, Goodier's Lane, Salford.*—On November 17th, Ann L., aged 55 years, was removed to Monsal, and died of typhus four days after admission.
- Dec. 2, 1880. *34, Harding Street, Brindle Heath, Pendleton.**—On December 2nd, Robert H. was removed to Monsal. He recovered.

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Crescent Wharf, Oldfield Road, Salford.—On December 11th, William B., aged 30 years, was removed to Monsal, and died of typhus two days subsequently. Dec. 11, 1880.

7, Waterloo Place, Bombay Street, Bury Street.*—On January 5th, 1881, Mary C., aged 16 years, was removed to Monsal. On January 28th, William C., aged 3 years, brother of the previous patient, was also removed to Wilton House; and on the 3rd of February, Kate C., aged 7 years, sister of the former two patients, was removed to Wilton Hospital. All three of them recovered. Jan. 5, 1881.

In endeavouring to set in order the somewhat intricate details of the Typhus Epidemic now happily at an end, the Officer of Health has concerned himself to relate accurately what occurred, rather than to account for what was obscure in the sequence of the cases. Sequence of cases.

To those conversant with the social peculiarities of the people attacked—some of whom were leading grossly immoral lives and many more were intemperate,—the frequent breaks in the chain which connects one case with another will occasion little surprise. Some of these people, and especially the inhabitants of the “Battery,” purposely concealed the fact of sickness from the emissaries of the Health Department, and as soon as a patient was removed to hospital, every vestige of his bedding and clothing was stealthily removed from the inspector’s sight, and either pawned or conveyed to the house of a neighbour. It was frequently found, that in order to avoid official vigilance and consequent removal to hospital, the patients, on first showing signs of sickness, were removed from house to house and hidden away from the inspectors. The condition of utter helplessness† to which the poor creatures were reduced by sickness was a powerful agent in accelerating the spread of infection amongst them, and their misery was intensified by the inclement weather which prevailed during a portion of the time. Habits of the people.

The danger incurred by those engaged day after day in the handling and removing of typhus patients is so formidable, and the known fatality of the disease when acquired is so great, that few are to be found who will faithfully discharge this important function. The Officer of Health desires therefore to mention, as worthy of high commendation, the unselfish and fearless conduct of Inspectors Wilkinson and Buxton in the execution of their perilous duties connected with the epidemic. That the disease became so prevalent was attributable to circumstances over which the Inspectors had no control. They did their duty bravely in the face of very considerable difficulties; and it is not too much to affirm, that to the self-devotion and energy of Danger incurred by Inspectors in handling the patients.
Praiseworthy conduct of Inspectors.

† It is simple justice to mention that, on several occasions during the cold weather, Inspector Wilkinson provided mainly at his own cost, and distributed to the poor starving wretches in the “Battery,” large quantities of hot soup and tea, and in various other ways contributed to the alleviation of their sufferings.

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Rate of mortality amongst the persons attacked.

these officers is due, in an eminent degree, the eventual stamping out of the epidemic.

In the first six months of the year 1880, 24 cases of typhus occurred, and the rate of mortality amongst them was equal to 29 per cent. During the months of July, August, and September, 24 cases occurred, but the rate of mortality amongst these patients did not exceed 17 per cent. In the winter quarter of this year, 31 cases occurred with a rate of mortality equal to 32 per cent. In the spring quarter of 1881, the number of seizures was 22, of which 14 per cent. died; whilst from April to August of the latter year only three cases occurred, none of which were fatal.

The following table shows the ages of the patients attacked, and likewise indicates the varying fatality of typhus at the different ages:—

Ages	All ages.	Under 10 years.	10 to 20 years.	20 to 40 years.	Above 40 years.
Recoveries	80	16	22	33	9
Deaths	24	2	2	11	9
Percentage Mortality..	23	11	8	25	50

Varies with age.

The rate of mortality from the recent epidemic of Typhus is thus seen to have been far heavier amongst patients over 40 years of age than at any other period of life. Thus, from the tenth to the twentieth year of age the fatal cases were in the ratio of eight to every 100 persons attacked, whilst at the age of 40 years and upwards, 50 per cent. or just one half of those infected, succumbed to the disease. In this respect, therefore, the experience of the present is fully in accord with that of previous epidemics.

II.—WORK OF THE HEALTH DEPARTMENT.

II.—WORK OF THE HEALTH DEPARTMENT.

8.—*Sanitary Inspection.*

As in previous reports, a table is here inserted giving a detailed account of the work done by the Health Department during the year. SECTION VIII.

It will there be seen that twenty-eight thousand inspections have been made by the inspecting staff, and that in consequence of their action, over six thousand separate nuisances injurious to health have been removed from about the dwellings of the people. The people living in certain of the poorer neighbourhoods of the Borough, in those of Pendleton and Broughton not less than in those of Salford, are so improvident and filthy in their habits that they monopolise the chief attention of the inspectors, who, backed with all the machinery of the Public Health Act, find it almost impossible to force upon them even a tolerable degree of cleanliness. To a person fully conversant with the habits of these people, it is not difficult to realise that were the vigilance of the Health Department even temporarily withdrawn, they would literally “breed a pestilence.”

It may be as well to repeat, for the information of the public, that each inspector attends at the Health Office every morning from nine to ten o’clock, in order to attend personally to complaints, and to enter in the diary particulars of the previous day’s work, which he regularly submits for inspection by the Medical Officer of Health. It is desirable that it should be generally understood that no complaints are likely to receive attention on the day of receipt, unless they are lodged at this office before ten o’clock in the morning, at which hour the inspectors leave the office for their respective districts. If possible, complaints should be made by letter, addressed to the Medical Officer of Health; they will then pass under his immediate notice and be promptly attended to by the proper officer.

Any one desiring to consult the Medical Officer of Health personally, would oblige by calling at the office before eleven in the morning; his attendance after this hour cannot be depended upon.

PARTICULARS OF WORK DONE BY THE HEALTH DEPARTMENT
DURING THE YEAR 1880.

	Borough.	Regent Road.	Greengate.	Pendleton.	Broughton.	
No. of Complaints lodged at Health Office	2150	1056	632	124	338	
Inspections made	Of Dwelling-houses	15698	5362	3288	4072	2976
	„ Lodging-houses	722	539	183	..	..
	„ Slaughter-houses	2236	780	364	780	312
	„ Dairies and Milkshops	175	89	18	24	44
	„ Shippons	1508	520	..	416	572
	By Smoke Inspector—Observations taken	487	156	182	127	22
	Under Adulteration Act—Samples collected for Analysis	497	245	112	66	74
	By Meat Inspector—Seizures made	315	286	23	5	1
	Miscellaneous Sanitary Inspections	809	471	208	10	120
	Re-Inspections after Service of Notice	5689	2980	1392	654	663
(Total Inspections made by Staff ..	28136	11428	5770	6154	4784	
Orders issued for abatement of Nuisances	3268	1715	691	496	366	
Nuisances abated pursuant to order.	Houses and Premises cleansed, repaired, and limewashed	1126	632	232	195	67
	Houses disinfected after Infectious Disease	865	447	177	159	82
	House drains repaired, trapped, or disconnected	1527	829	490	101	107
	Ashpits and Privies repaired or reconstructed	799	489	103	151	56
	Accumulations of Manure and Refuse removed	99	29	24	18	28
	Number of Ashpits attended to after complaint	1134	204	191	22	717
	Improperly-kept Animals removed	93	28	23	1	41
	Overcrowding of Dwellings abated	47	30	17	..	..
	Passages and Yards drained and flagged	610	375	90	1	144
	(Total Number of Nuisances abated.	6300	3063	1347	648	1242
Registered	Lodging-houses	72	60	12	..	..
	Slaughter-houses	43	15	7	15	6
	Dairies and Milkshops	175	89	18	24	44
	Shippons	78	20	..	36	22
	Marine and Second-hand Stores ..	185	110	41	24	10
Patients removed to Fever Hospital ..	449	330	66	21	32	
Infected bedding and clothing disinfected ..	67	29	8	6	24	
Infected articles destroyed	25	20	2	3	..	
Legal Proceedings taken (see Page ..).	..	..	..	..	..

ISOLATION OF INFECTIOUS DISEASE.

SECTION VIII

During the year under review, 446 persons suffering from infectious complaints were removed to Hospital by the Health Department; of these, 387 were sent to Wilton Hospital and 59 to Monsal. Fever hospital report

The average duration of each patient's residence in Wilton Hospital was 33·4 days. Of the deaths occurring at Wilton Hospital during the year, 14 took place within less than 48 hours, 5 more within 3 days, and 12 more within 4 days of admission to the wards. Thus, of the total number dying in hospital, not less than 27 per cent. passed away within four days of their removal from home. This plainly indicates the severe type of the disease from which the patients were suffering. The mortality from measles was very high, being equal to 20 per cent. of the admitted cases. The year 1880 was one of exceptional measles fatality, both in Salford and elsewhere. Thus, in the Liverpool Workhouse Hospital 121 measles cases were treated during this period, and the mortality amongst them was considerably in excess of that attaching to our Salford cases,—it was equal to not less than 25·7 per cent. of the cases coming under treatment. Heavy Measles mortality.

Since the issue of the last Report (1879), the Health Committee have effected the more complete isolation of the hospital by demolishing a certain number of houses on its north side, which formerly impeded ventilation on that aspect of the building. The only thing now remaining, in order to render the hospital a thoroughly complete establishment, is the erection of a suitable administrative block within the present enclosure, so as to allow of the appropriation of the entire hospital building as it now stands, to the reception of infectious patients. The Medical Officer of Health, therefore, trusts that the Health Committee will shortly see their way to the accomplishment of this work, which is urgently needed, and which when complete, will greatly contribute to the comfort of the patients, and to the convenience of the hospital staff. Isolation of Wilton Hospital

Since the opening of the Wilton Hospital in 1876, not fewer than 1314 patients (including the 59 sent to Monsal) have been isolated by the Sanitary Authority of Salford, for the protection of the public health. The following figures, which—having been derived from the Borough Treasurer, may be accepted as reliable—show the sums expended by the Corporation on the maintenance of the hospital since its opening in 1876:— Cost of maintenance of patients.

	1880.			Total since opening in 1876.		
	£	s.	d.	£	s.	d.
Resident Medical Officer and Matron	160	0	0	702	3	0
Fee to Medical Superintendent .. ..	..	..	..	60	0	0
Wages of Nurses	504	18	2	2003	13	0
Rates, Taxes, and Insurance ..	197	0	0	610	16	7
Coal, Gas, and Water	330	8	8	1293	14	11
Meat, Provisions, & Groceries.	1084	19	4	3819	14	11
Carried forward	£2277	6	2	£8490	2	5

SECTION VIII.

	£	s.	d.	£	s.	d.
Brought forward	2277	6	2	8490	2	5
Cost of maintenance of patients. Medicine and Stimulants	354	7	11	1215	0	8
Disinfectants	4	19	0	30	16	9
Clothing	12	7	6	37	9	0
Repairs	135	12	6	805	6	5
Provender and Farriery	38	16	1	191	8	2
Printing, Stationery, &c.	11	0	3	68	6	0
Cleansing Materials, &c.	46	3	4	403	9	9
Collecting Hospital Charges	36	14	2	88	9	2
Total	£2917	6	11	£11330	8	4

Amount received by Health Committee for maintenance of patients in Hospital since 1876. } £3082 14 10

Inasmuch as gross mis-statements have been circulated relative to the cost of patients at Wilton Hospital, the Medical Officer of Health has carefully calculated the average weekly cost of maintenance per patient—including all charges incidental to such maintenance, but of course excluding any portion of the cost of building the establishment—an item which is never included in the cost of hospital management.

The cost of maintaining each patient has averaged 39s. 11d. per week.

PROCEEDINGS UNDER THE ADULTERATION ACT.

Adulteration of Food Act.

Mr. J. Carter Bell, F.C.S., F.I.C., the Public Analyst for the Borough, has analysed 506 samples of food and drugs collected during the year by Inspector Thompstone. The following figures* show the percentage of adulteration detected in the samples submitted for analysis during 1880, together with the proportions in former years.

Proportion of adulteration detected.

It will thus be seen that the continued action taken under the Adulteration Act, has done good service in improving the purity of most of the articles of consumption. In the case of milk, the improvement is specially noticeable. For instance, by the aid of the above table we find that in the three years 1875-77, 914 samples of milk were analysed, the proportion of adulterated to pure samples averaging 52.7 per cent.; whereas in the last three years 1878-80, 772 samples were analysed, the average percentage of adulterated samples having fallen to 22.6 per cent.

Samples taken from farmers at railway stations.

With a view of ascertaining to what extent milk is tampered with previous to its arrival in Salford, a number of samples have been taken by Inspector Thompstone at the railway stations, before delivery to the retail tradesmen. The following is Mr. Carter Bell's report† on these samples, and shows very plainly that our Salford milk-sellers run considerable risk of being fined for adulteration which is practised by the farmers before the milk reaches Salford.

* See page 42. † See page 43.

HOSPITAL REPORT FOR THE YEAR 1880.

(52 Weeks ending January 1st, 1881.)

	Males.		Females.		Total.	Salford Cases sent to Monsall.	
	Under 5.	Over 5.	Under 5.	Over 5.		Under 5.	Over 5.
I.—Patients remaining in Hospital on Dec. 31st, 1879, affected with							
Enteric Fever .....	..	1	..	3	4	..	..
Scarlet Fever	4	11	7	5	27	..	..
Measles	4	..	1	1	6	..	..
Other Acute Diseases	6	..	3	1	10	..	..
Total	14	12	11	10	47	..	..
II.—Admitted during the 52 Weeks ending Jan. 1st, 1881, affected with							
Small Pox .....	..	2	..	..	2	..	..
Typhus Fever .....	..	8	1	11	20	1	42
Enteric Fever	1	32	..	38	71	..	3
Scarlet Fever	40	49	24	77	190	2	7
Measles	26	3	22	4	55	..	..
Diphtheria .....	..	..	..	2	2	..	..
Whooping Cough	6	..	7	1	14	1	..
Other Acute Diseases	9	10	3	11	33	..	3
Total	82	104	57	144	387	4	55
Total under Treatment in 1880	96	116	68	154	434	4	55
III.—Of the above there were discharged recovered from							
Small Pox .....	..	2	..	..	2	..	..
Typhus Fever .....	..	4	1	6	11	1	29
Enteric Fever	1	22	..	25	48	..	1
Scarlet Fever	18	45	15	69	147	2	5
Measles	21	3	19	4	47	..	..
Diphtheria .....	..	..	..	2	2	..	..
Whooping Cough	2	..	6	1	9	1	..
Other Acute Diseases	9	6	5	7	27	..	3
Total	51	82	46	114	293	4	38
IV.—Died from							
Typhus Fever .....	..	4	..	5	9	..	9
Enteric Fever .....	..	9	..	12	21	..	2
Scarlet Fever	22	8	16	9	55	..	2
Measles	8	..	3	..	11	..	..
Whooping Cough	4	..	1	..	5	..	..
Other Acute Diseases	6	4	1	4	15	..	..
Total	40	25	21	30	116	..	13
V.—Remaining in Hospital on January 1st, 1881, affected with							
Typhus Fever .....	..	..	..	..	..	..	4
Enteric Fever .....	..	2	..	4	6	..	..
Scarlet Fever	4	7	..	4	15	..	..
Measles	1	..	1	1	3	..	..
Other Acute Diseases .....	..	..	..	1	1	..	..
Total	5	9	1	10	25	..	4
Total under Treatment in 1880	96	116	68	154	434	4	55

SAMPLES COLLECTED BY THE INSPECTOR UNDER THE ADULTERATION ACT
FROM 1875 TO 1880.

Year.	Total No. of Samples	Milk.	Butter.	Bread and Flour.	Drugs.	Grocer- ies.	Beer and Porter.	Wines and Spirits.	Sun- dries.
1875	60	37	1	1	1	..	7	4	9
1876	119	43	2	18	34	17	..	..	5
1877	390	114	7	159	22	30	18	37	3
1878	418	197	10	35	31	25	24	70	26
1879	518	306	16	130	15	28	10	13	..
1880	506	269	12	48	5	52	71	18	31

PERCENTAGE OF THE ABOVE ARTICLES RETURNED AS ADULTERATED.

Year.	Total No. of Samples	Milk.	Butter.	Bread and Flour.	Drugs.	Grocer- ies.	Beer and Porter.	Wines and Spirits.	Sun- dries.
1875	66.6	62.1	100.0	..	..	..	100.0	75.0	66.6
1876	40.3	55.8	50.0	27.8	35.3	17.6	..	..	60.0
1877	27.4	40.3	28.6	11.3	13.6	6.7	..	97.3	..
1878	29.9	29.4	10.0	2.9	51.6	4.0	4.2	67.1	..
1879	12.0	13.1	25.0	5.4	26.6	10.7	10.0	23.1	..
1880	20.2	25.2	75.0	6.3	..	17.3	11.3	11.1	9.7

Particulars of Milk consigned to Salford Dealers by Farmers living outside the Borough, showing the number of samples taken at the Railway Stations before delivery, by the Salford Inspector, and the Analyst's Report on the quality of the Milk :—

		Result of Analysis.	Place of Delivery.
1	E. G., Mobberley, Cheshire	Contained 5 % of water ..	Old Trafford.
2	W. R., Delamere, do.	Pure	Do.
3	R. J., Mouldsworth, do.	Contained 5 % of water ..	Ordsal Lane.
4	Do. do. do.	Do. 10 % do. ..	Do.
5	S. J., Mobberley, do.	Do. 10 % do. ..	Old Trafford.
6	O. J., Chatburn, Lancashire	Do. 3 % do. ..	Pendleton.
7	D. C., Knutsford, Cheshire	Do. 5 % do. ..	Old Trafford.
8	S. J., Congleton, do.	Do. 10 % do. ..	Ardwick Station.
9	Do. do. do.	Do. 10 % do. ..	Do.
10	Do. do. do.	Very poor milk	Do.
11	P. T., Chatburn, Lancashire	Pure	Victoria Station.
12	R. P., Macclesfield, Cheshire ..	Do.	Ardwick Station.
13	S. J., Hellifield, Lancashire	Do.	Victoria Station.
14	H. S., Todmorden, Yorkshire ..	Robbed of 12 % of its cream	Do.
15	H. J. M., Mobberley, Cheshire..	Contained 6 % of water, and robbed of 12 % of its cream	Old Trafford.
16	B. J., Milnrow, Yorkshire	Robbed of 30 % of its cream	Victoria Station.
17	S. J., Mobberley, Cheshire	Contained 30 % of water ..	Old Trafford.
18	Do. do. do.	Do. 15 % do. ..	Do.
19	N. J., Knutsford, do.	Do. 5 % do. ..	Do.
20	Do. do. do.	Do. 4 % do. ..	Do.
21	P. S., do. do.	Pure	Do.
22	S. P., Mouldsworth, do.	Contained 13 % of water ..	Do.
23	Do. do. do.	Do. 12 % do. ..	Do.
24	N. J., Knutsford, do.	Do. 4 % do. ..	Do.
25	Do. do. do.	Do. 4 % do. ..	Do.
26	S. P., Mouldsworth, do.	Pure	Do.
27	Do. do. do.	Very poor milk	Do.
28	H. J. M., Mobberley, do.	Do.	Do.
29	H. J., Tabley, do.	Pure	Do.
30	S. J., Mobberley, do.	Pure	Do.
31	O. J., Lostock Gralam, Cheshire.	Contained 10 % of water ..	Do.
32	H. T., Levenshulme, Lancashire.	Pure	Salford.
33	P. R., Plumbley, Cheshire	Do.	Old Trafford.
34	W. P., Knutsford, do.	Do.	Do.
35	B. W., Lymm, do.	Do.	Do.
36	E. T., Knutsford, do.	Contained 6 % of water	Do.
37	K. J., Lower Peover, do.	Pure	Do.
38	P. F. T., Knutsford, do.	Do.	Do.
39	N. P., Mouldsworth, do.	Do.	Do.
40	S. W., Plumbley, do.	Do.	Do.
41	F. J., Northwich, do.	Do.	Do.
42	H. J. M., Mobberley, do.	Do.	Do.
43	S. J., do. do.	Do.	Do.
44	B. W., Skipton, Yorkshire	Robbed of 10 % of its cream	Victoria Station.
45	Do. do. do.	Pure	Do.
46	W. S., Northwich, Cheshire	Contained 10 % of water ..	Old Trafford.
47	B. W., Gisburn, Lancashire	Do. 10 % do. ..	Victoria Station.
48	S. M., Knutsford, Cheshire	Do. 11 % do. ..	Old Trafford.
49	Do. do. do.	Do. 4 % do. ..	Do.
50	B. W., Gisburn, Lancashire	Do. 3 % do. ..	Do.

Of the above 50 samples, 20 were reported pure, 27 as impure, and 3 as very poor milk.

SECTION IX.

9.—Unwholesome Food Seized and Destroyed.

Seizure of
unwholesome
food.

The following is a detailed statement of the seizures of bad meat and other unwholesome commodities made by Mr. A. W. K. Fordham, M.R.C.V.S., the Meat Inspector of this department:—

Description of Food.	No. of Seizures.		Weight.			
			T.	C.	Q.	Lb.
Beef	31	....	5	7	0	18
Mutton	241	....	5	5	0	9
Veal	32	....	0	14	3	1
Pork	6	....	0	9	0	26
Fish	1	....	0	1	1	0
Horse-flesh	2	....	0	5	3	9
Venison	2	....	0	0	3	6
Total	315	....	12	4	0	13

The above statement shows that over 12 tons of meat, either unsound, unwholesome, or unfit for the food of man, were seized and destroyed during the year. In 1879, 11½ tons were seized and similarly dealt with.

Disposal of con-
demned meat.

It will be interesting to the public to know that all meat condemned by the magistrates is sent to the tallow merchant, and so disposed of that there is no danger of its ever being again offered for sale as food in Salford. The following Table gives the number of persons convicted for selling or offering unsound meat for sale.

In the undermentioned cases it has been found necessary to adopt legal proceedings in order to obtain the abatement of nuisances, or to compel obedience to sanitary requirements:—

Particulars of Complaint.	No. of Cases.	How disposed of.	Amount of Fines.
Adulteration of food and drugs ..	47	{ Thirty-two fined, in all £94 10s.; six dismissed, four withdrawn, two withdrawn on payment of costs, two not served	£ s. d. 94 10 0
Being in possession of diseased meat	7	{ Four fined, in all £12: three warrants issued	12 0 0
Exposing diseased meat for sale..	10	{ Eight fined, in all £46 10s.; one dismissed, one not served ..	46 10 0
Ashpits and privies, drains, and other premises in such a state as to be a nuisance	73	{ Thirty-two orders to abatement made, forty withdrawn, one not served .....	....
Using furnaces not so constructed as to consume or burn the smoke arising therefrom	14	{ Ten fined, in all £33 10s.; three withdrawn, one dismissed ..	33 10 0
Negligently using furnaces so constructed as to consume or burn the smoke arising there- from	13	{ Nine fined, in all £12 11s.; three dismissed, one withdrawn on payment of costs	12 11 0
Carried forward	164	Carried forward	£ 199 1 0

Particulars of Complaint.	No. of Cases.	How disposed of.	Amount of Fines.
			£ s. d.
Brought forward	164	Brought forward	199 1 0
Letting houses in lodgings without being registered	22	{ Seventeen fined, in all £3 4s.; } four withdrawn, one not served }	3 4 0
Permitting more persons to sleep in rooms than they were registered to accommodate ..	3	{ Two fined, in all £1 5s.; one } dismissed	1 5 0
Houses being in such a condition as to be prejudicial to health	7	{ Three fined, in all £1 5s.; two } withdrawn, two not served .. }	1 5 0
Disobeying order of Magistrates; re-order to abate	4	{ One fined 5s., two withdrawn, one } not served, warrant issued .. }	0 5 0
Keeping common lodging-houses without being registered	5	{ Three fined, in all £3; two with- } drawn	3 0 0
Transmitting infected bedding without due precautions	2	Withdrawn .....	....
Being in charge of and exposing persons suffering from infectious disease	3	Dismissed .....	....
Burning bricks nearer than 60 yards from dwelling-houses ..	1	Fined 5s.	0 5 0
Neglecting to raise chimney	1	Withdrawn .....	....
	212		£ 208 5 0

10.—Sanitary Bye-Laws, action under.

SECTION X.

In addition to the 699 dairies and cow-sheds registered under the “Dairies and Cow-sheds Act,” in 1879, there were registered during the year under report 175, making a total of 874 on the register up to the present date. This order provides that local authorities may make bye-laws regulating the cleansing and due management of dairies, cow-sheds, and milk-stores. The following are the regulations made by the Corporation as the Salford Sanitary Authority, and which are now in force in the borough:—

1. No room used for the storage or sale of milk shall be occupied as a living-room, or communicate by door, window, or otherwise, with any bedroom, and the walls of such room must not be papered, but they may be either limewashed, coloured in distemper, or painted.
2. Every milk vessel, table, bench, and all other utensils and furniture, shall be washed and thoroughly cleansed every day.
3. The words “Registered for the Sale of Milk” shall be painted and kept clear and legible over the entrance door of every room used for the sale of milk.
4. All premises used for the sale of milk shall be open at all times to the inspection and examination of the officers appointed by the local authority for the purpose.
5. Every cow-shed shall contain for each cow a superficial

SECTION X.

Salford regulations for dairies and cowsheds.

area of not less than 42 square feet, nor less than 380 cubic feet of space. The sheds must have satisfactory provision for light and ventilation.

6. The floors of all cow-sheds shall be of cement, concrete, brick, stone, or other non-absorbent material, and the *joints* thoroughly "grouted" with cement.

7. All cow-sheds shall be drained by means of an open channel which must be continued to the outside of the wall, and there deliver itself on a trapped gulley, or otherwise drained to the satisfaction of the local authority.

8. The floors of all cow-sheds shall have the manure, &c., cleaned off at least twice daily, and must be thoroughly cleansed with water once a week.

9. The walls shall be lime-washed at least twice in every year; namely, in March and October, and also at such other times as may be deemed necessary by the Officer of Health.

10. The manure of the cow-shed shall be kept in a properly constructed "sewered middenstead," and removed once a month, or oftener if deemed necessary by the Officer of Health.

Any person doing anything in contravention of the Order of Council, or of these regulations will be liable to a penalty of not exceeding twenty pounds.

Common lodging houses.

Common Lodging-houses.—There are ten Common Lodging-houses in the Borough, all of which are in the Salford District. These contain 34 sleeping-rooms and provide accommodation for 145 persons.

The average weekly number of occupants of these lodging-houses during the year has been 75 male, and three female regular lodgers, and 74 male, and two female casual lodgers.

In addition to the above, there are 250 houses or parts of houses let in lodgings in Salford, which are regulated by a special code of bye-laws, but do not come under the regulations applicable to Common Lodging-houses.

Sanitary condition of.

All these establishments are kept under the careful supervision of the Lodging-house Inspector, who takes care that the bye-laws are duly observed, and that proper attention is paid to ventilation and cleanliness. The internal condition of all these lodging-houses has been generally satisfactory, their appointments have been kept in good repair and the bedding has been fairly clean.

In compliance with the bye-laws, the houses have been lime-washed throughout at prescribed intervals.

Health of inmates.

The health of the inmates has been unusually good, not a single case of infectious disease having occurred amongst them during the entire year.

The salutary supervision which registration enables us to exercise over lodging-houses, makes it very desirable that the register of these buildings should be complete, and should include all the houses devoted to the accommodation of the

SECTION X.

nomadic portion of our labouring classes. Sundry raids at night upon suspected houses of this class, which are well known to the Inspectors, have revealed the fact that the provisions of the act relative to the letting of lodgings are very frequently evaded. During the year under report, the Sanitary Inspectors have visited one hundred and nine houses, the tenants of which were suspected of harbouring lodgers contrary to the provisions of the Act. These inspections have necessarily been made at or after midnight, in order to prove that the lodgers were actually sleeping in the suspected houses. As a result of this portion of the Inspectors' duty, which is an exceedingly arduous one, 22 persons have been summoned and seventeen fined for letting houses without being registered.

Inspection of
lodging houses
at night.

The following extract from the Regulations under the Sanitary Act, 1866, gives the substance of the law now in force relative to the letting of lodgings in Salford :—

Regulations as
to lodging
houses.

“No person shall let as lodgings any house or part of a house, in which more than two adult persons shall sleep in one room ; nor shall any person receive lodgers in any house or part of a house, in which more than two adult persons shall sleep in one room. Nor shall any person let any house or part of a house to be occupied by members of more than one family, in which more than two adult persons shall sleep in one room, until such house or part, &c.; and the person proposing to let the same, or to receive lodgers therein, are registered at the Office of the Inspector of Nuisances for the Borough, in the Town Hall, Salford.”

11.—Supervision of Offensive Trades.

In the Eleventh Annual Report,* particulars were given of all the Offensive Trades at that time carried on in Salford. There is no necessity that the list should be re-produced here, but some remarks are called for with respect to a few of the more important matters previously referred to under this heading.

SECTION XI.

Offensive
trades.

The Corporation Gas works in the Regent Road have been seriously complained of again and again by the residents in this locality, and certainly not without reason. One complaint in particular, accompanied by a memorial, was made to the Health Committee in the earlier part of the year. The Medical Officer's special report on this complaint will be found on page 15.

Corporation Gas
Works.

It is necessary to revert once more, in terms of condemnation, to what must be considered the most degrading of all the public nuisances in Salford, none the less degrading because they exist under the sanction of Authority—the private slaughter-houses.

Private slaugh-
ter houses.

These establishments, forty-one in number, were made the subject of a special report to the Health Committee in 1878.† With few exceptions, they are situated in the back slums of the

* Ann: Report, 1879, page 41.

† See page lxxxi., Appendix to decen: Report, 1878.

SECTION XI.
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Borough, districts in which alone they would be tolerated, and where for that very reason they ought, on Sanitary grounds, specially to be prohibited. In such places, however, they are tamely submitted to, just as would any other similar agency, as mere factors in the hopeless slovenliness and demoralization in which the people habitually live.

Brick making.

The nuisance arising from the noxious trade of brickmaking, is by no means diminishing in Salford. It is, of course, undesirable to place undue restrictions on the erection of house property and the contingent handicraft of brickmaking; but this latter business, as at present carried on in certain parts of Salford, is a nuisance unquestionably injurious to health, and it will be for the Health Committee to consider before long how far it is justified in permitting the exercise of it within the prescribed limit of 60 yards.

III.—VITAL STATISTICS.

III.—VITAL STATISTICS.

AREA.—The municipal Borough of Salford, comprising the Townships of Broughton, Salford, and Pendleton, together with a detached portion of Pendlebury, contains an area of 5,170 acres, or rather more than eight square miles.

SECTION XII.
Area.

ELEVATION.—The population of Salford resides at a mean elevation above the sea level of 140 feet. The maximum elevation of any part of the Borough is 250 feet, the minimum 85 feet. The low-lying land predominates in extent over that at higher levels.

Elevation.

INHABITED HOUSES.—In the middle of the year 1880 there were 33,345 inhabited houses in the Borough. At the Census of 1881 each house contained an average of 5·15 persons; the average was 5·2 at the preceding Census.

Inhabited houses.

ANNUAL RATEABLE VALUE.—The annual rateable value of property in Salford in 1880 was £795,406. In the year 1871 it was £517,048.

Rateable value.

DENSITY.—The mean density of the population, expressed as so many persons living on an acre of ground, was 33·2. In the year 1871 it was 24·2.

Density.

POPULATION.—The Census returns of 1881 having been published, the estimate of the Salford population can be corrected for all the years since 1871.

Population.

The following are the populations enumerated at the Census of 1871, and that of 1881 respectively:—

	1871.	1881.	Rate of Increase or Decrease per cent.		Movement of population.
			Population.	Inhabited Houses.	
Borough Total ..	124,805	176,233	+ 41·2	+ 43·4	
Regent-road	46,674	69,716	+ 49·4	+ 49·3	
Greengate	36,606	31,867	— 12·9	— 12·4	
Pendleton	26,564	43,117	+ 62·3	+ 67·5	
Broughton	14,961	31,533	+ 110·8	+ 126·0	

It will thus be seen that the districts of Regent Road, Pendleton, and Broughton have very rapidly increased during the inter Census period; and that the district of Greengate, on the contrary, has actually decreased by 13 per cent.

SECTION XII.

Corrected by the result of the recent Census enumeration, the estimate of the Salford population in the middle of 1880 is 171,727.

This estimate is arrived at as follows:—The enumerated population on the night of April 3rd, 1881, was 176,233. At the 1871 Census the figures were 124,805. One-tenth of the difference between the logarithms of these numbers, is the log. of the annual rate of increase obtaining in the interval between the Census years. Therefore, the logarithm obtained by deducting three-fourths of this latter expression from the log. of the recent Census population corresponds to the number required; namely, the estimate for the middle of the year 1880.

In the year 1877, the Registrar General, at the request of the Corporation, consented to revise his estimate of the Salford population, taking as a basis, the number of inhabited houses on the rate-books at that time. In the year 1877, however, the per centage of empty houses was unusually low, whereas at the census just completed, it was shown to be as high as 11·5 per cent. The result is, that the estimate of the population in 1880, calculated on the rate of increase assumed to be going on in 1877, exceeds the estimate based on the recent census enumeration by 8·4 per cent.

ANNUAL RATE OF INCREASE.—The natural rate of increase to the population of Salford during the year 1880, by excess of births over deaths, was 2,303. Assuming that the emigrants and immigrants were equal in number, the annual rate of increase was equal to 1·4 per cent.

MARRIAGES.—1,466 marriages were registered as having been contracted during the year within the Registration District of Salford, against 1,298 in the preceding year.

CENSUS RETURNS, 1881.

STATISTICAL DIVISIONS.		POPULATION.					
		1881.			1871.		
		Total.	Males.	Females.	Total.	Males.	Females.
Municipal Borough	....	176,233	84,593	91,640	124,805	59,151	65,654
Reg. S. Dist.	{ Regent-road	69,716	34,418	35,298	46,674	23,021	23,653
	{ Greengate	31,867	15,268	16,599	36,606	17,563	19,043
	{ Pendleton (part of)	43,117	20,319	22,798	26,564	12,136	14,428
	{ Broughton	31,533	14,588	16,945	14,961	6,431	8,530
		HOUSES.					
		Inhabited.	Uninhabited.	Building.	Inhabited.	Uninhabited.	Building.
Municipal Borough	....	34,213	4,436	224	23,860	1,853	479
Reg. S. Dist.	{ Regent-road	13,168	1,645	150	8,817	782	271
	{ Greengate	6,296	476	11	7,188	381	5
	{ Pendleton (part of)	8,587	1,359	32	5,128	389	113
	{ Broughton	6,162	956	31	2,727	301	90

This number gives a rate of persons married per 1,000 of the population equal to 16·6, against 15·2, the rate for 1879.

SECTION XII.
Marriage rate in Salford.

The accompanying table (A) gives the rate of persons married in each of the years 1865-80.

The marriage rate in 1880 is identical with the average rate of the previous decennium, and exceeds the excessively low rate of 1879 by 1·4 per 1,000.

Dividing the ten years 1869-78 into two quinquennia, the marriage rate appears to have been very much depressed during the first five years, averaging only 14·5 per 1,000. Then followed a steady rise, and from 1874 to 1878 the marriage rate averaged 18·3 per 1,000, or 26 per cent. in excess of the rate obtaining during the previous quinquennium.

Variation in
during the
decennium.

From the point of view of the Sanitarian, it is interesting to observe the fluctuations in the marriage rate, for it undoubtedly bears a close relation to the commercial prosperity of the people, whilst the latter in its turn, certainly influences very materially the public health. In his forty-first annual report, page cxiv., the Registrar General draws attention to certain relations which obtain between the general prosperity and the marriage rate of the whole country. This document will repay perusal.

TABLE A.

POPULATION, DENSITY, BIRTHS, AND DEATHS; ALSO THE ANNUAL MARRIAGE, BIRTH, AND DEATH-RATES, IN THE BOROUGH OF SALFORD, FOR EACH OF THE SIXTEEN YEARS—1865-1880.

YEAR.	Proportion estimated to the middle of each year.	Density. Persons per Acre.	Births.	Deaths.	Annual Rate per 1000 living.		
					Mar-riages.†	Births.	Deaths.
1865	111,414	21·6	4,207	3,239	12·9	37·8	29·1
1866	113,635	22·0	4,307	3,268	13·4	37·9	28·8
1867	115,901	22·4	4,517	3,267	14·3	39·0	28·2
1868	118,211	22·9	4,715	3,661	13·3	39·3	30·5*
1869	120,567	23·3	4,681	3,182	14·1	38·8	26·4
1870	122,967	23·8	4,870	3,167	14·1	39·6	25·8
1871	125,890	24·3	5,127	3,815	14·6	40·7	30·3
1872	130,301	25·2	5,399	3,299	15·1	41·5	25·3
1873	134,883	26·1	5,691	3,884	14·4	41·6	28·3*
1874	139,618	27·0	5,884	3,935	16·2	42·1	28·2
1875	144,518	27·9	6,421	4,271	17·5	44·4	29·5
1876	149,591	28·9	6,806	4,407	20·5	45·5	29·5
1877	154,842	29·9	6,866	4,079	19·6	44·4	26·3
1878	160,277	31·0	7,161	4,336	17·9	44·7	27·1
1879	165,899	32·1	7,240	4,495	15·2	43·0	26·7*
1880	171,727	33·2	7,102	4,799	16·6	41·3	27·9

* In the years 1868, 1873, 1879, the facts are those registered in 53 weeks, corrections have therefore been made in calculating the rates.

† i.e., Persons married per 1,000 of population in the Registration district of Salford.

SECTION XII.

Birth-rate.

BIRTHS.—During the 52 weeks of the year 1880, the births of 7,102 children were registered in Salford. The births were equal to an annual rate of 41·3 per 1,000, which is the lowest rate recorded in any year since the last census (1871). The birth-rate, however, is still very high, and exceeds by 5·2 per 1,000 the average rate of the 20 larger towns of England.

Vaccinations.

VACCINATIONS.—The most recent particulars with regard to vaccinations which are available are those for the year 1878. In that year, 83·6 per cent. of the children born were successfully vaccinated, and 12·3 per cent. died unvaccinated; 4·1 per cent. of the infants under one year old therefore remained which were wholly unprotected against small-pox.

Mortality.

DEATHS.—The district registrars have reported to this office the deaths of 4,786 persons during the 52 weeks of the year 1880, and the deaths of 13 Salford residents have been reported from Monsal Fever Hospital, whither they had been sent for treatment; 4,799 deaths have therefore occurred amongst Salford townspeople, which number calculated on the recently corrected population, gives an annual rate of mortality equal to 27·9 per 1,000 living. In other words, one person out of every 36 of the Salford population has died during the year. Table A gives the means of comparing the death-rate of Salford during 1880, with that of the preceding 15 years, and Table B. sets forth the rate of mortality from all causes, as well as from infectious and certain other kinds of disease, in each year of the past decennium. The following are the general death-rates obtaining in the several districts during the year :—

Rate of

In districts of Salford

Regent Road.	Greengate.	Pendleton.	Broughton.
31·5	33·3	23·3	20·6

Compared with the rates in the previous ten years, the mortality in Regent Road was in excess of the average by 2·0 per 1,000, and that of Greengate by 2·4,—whilst the Pendleton and Broughton rates were in defect of the average by 2·1 and 0·5 per 1,000 respectively.

At the various seasons of the year.

The subjoined figures show the variation of the death-rate with the season of the year:—

	March Quarter.	June Quarter.	September Quarter.	December Quarter.
Average 1870-79	29·2	25·8	27·5	28·5
Year 1880	26·3	25·5	32·0	27·7

It will thus be seen that the death-rate during the whole year with the exception of the September quarter, was below the average. The excessive mortality during the autumn season of this year was due to unusual prevalence of diarrhoea.

Age at death.

AGE AT DEATH.—During the fifty-two weeks of 1880 the deaths of 1,403 infants under one year old were registered. These infantile deaths are equal to 29·2 per cent. of the deaths at all ages, and to 19·8 per cent. of the births registered. 2,592, or 54 per cent. of the total deaths, occurred within the first five

SECTION XII.
Age at death.

years of life. This is the highest proportion of deaths under five years ever reached in Salford since records of infantile mortality have been kept. 934, or 19·5 per cent. of the total mortality died at the age group 5-40 years; 669, or 13·9 per cent., at the age group 40-60 years; and 604, or 12·6 per cent., at the age 60 years and upwards.

The 4,799 deaths registered during the year include 2,475 males and 2,324 females. The normal rate of mortality in Salford calculated on the life table standard, with due allowance for age and sex proportions, is 21·5 per 1,000; namely, 22·4 for males and 20·7 for females. The actual rate of Salford mortality in 1880 exceeded the normal or life table rate by 29·7 per cent.; the excess was 35·2 among males, and 24·6 among females. The Table on page 9 gives the rate of mortality at certain age groups for each of the ten years 1870-79; we may now therefore compare the rate of mortality during 1880 with that of each the previous ten years:—

	All Ages.	0-5.	5-20.	20-40.	40-60.	60 and upwards
1870-79	27·7	96·2	6·6	11·0	26·0	82·2
1880	27·9	106·6	7·3	9·6	23·5	70·9
Difference in } 1880	+0·2	+10·4	+0·7	— 1·4	—2·5	—11·3

It thus appears that at all ages under 20 there has been an excess of mortality during 1880 as compared with former years. As before explained this was mainly caused by unusually excessive diarrhoeal fatality:—At all ages over 20 years, however, the 1880 rates were considerably lower than the average.

TABLE B.

ANALYSIS OF THE MORTALITY IN THE BOROUGH OF SALFORD IN EACH
OF THE TEN YEARS, 1870-79; AND IN THE YEAR 1880.

Year.	Death of Infants under 1 yr.	DEATHS.					
		From All Causes.		At All Ages from			
		Of children under Five years.	Of persons over 60 years.	All Causes.	Seven Zymotic Diseases.	Acute Lung Diseases.	Phthisis
1870	929	1,505	532	3,167	705	575	328
1871	1,134	1,987	481	3,815	1,016	692	396
1872	932	1,585	504	3,299	659	537	368
1873	1,055	1,863	616	3,884	790	674	374
1874	1,110	1,923	546	3,935	865	693	339
1875	1,141	2,039	654	4,271	982	890	382
1876	1,286	2,170	596	4,407	1,173	842	405
1877	1,108	1,988	589	4,079	781	927	413
1878	1,324	2,262	616	4,336	869	946	434
1879	1,230	2,215	708	4,495	713	1,102	480
1880	1,403	2,592	604	4,799	1,261	1,003	459
DEATH-RATES PER 1000 LIVING.							
Year.	Proportion of Deaths under One Year per 1000 Births	From All Causes.		At All Ages from			
		Of Child- ren under 5 years.	Of Persons over 60 years.	All Causes.	Seven Zymotic Diseases.	Acute Lung Diseases.	Phthisis
1870	191	86.5	87.2	25.8	5.7	4.7	2.7
1871	221	111.5	77.0	30.3	8.1	5.5	3.1
1872	173	85.9	78.0	25.3	5.1	4.1	2.8
1873	185	96.0	90.6	28.3	5.8	4.9	2.7
1874	189	97.0	78.9	28.2	6.2	5.0	2.4
1875	178	99.6	91.3	29.5	6.8	6.2	2.6
1876	189	102.4	80.4	29.5	7.8	5.6	2.7
1877	161	90.7	76.8	26.3	5.0	6.0	2.7
1878	185	99.7	77.5	27.1	5.4	5.9	2.7
1879	170	92.8	84.7	26.7	4.2	6.5	2.9
Average } 1870-79	184	96.2	82.2	27.7	6.0	5.4	2.7
1880	198	106.6	70.9	27.9	7.4	5.8	2.7

TABLE C.

POPULATION, DEATHS, AND RATE OF MORTALITY DURING THE 52 WEEKS OF THE YEAR 1880, AT FIVE GROUPS OF AGES, COMPARED WITH THE ENGLISH LIFE-TABLE RATES AT THOSE AGES, FOR PERSONS, MALES AND FEMALES.

	Persons.		Males.		Females.	
	Estimated Population, 1880.	Deaths, 1880.	Estimated Population, 1880.	Deaths, 1880.	Estimated Population, 1880.	Deaths, 1880.
All ages.....	171,727	4,799	81,565	2,475	90,162	2,324
Under 5 years ..	24,316	2,592	12,232	1,377	12,084	1,215
5 to 20 years....	53,711	391	26,381	202	27,330	189
20 to 40 years ..	56,762	543	26,217	286	30,545	257
40 to 60 years ..	28,422	669	13,204	351	15,218	318
60 and upwards..	8,516	604	3,531	259	4,985	345

ANNUAL DEATH-RATES PER 1000 LIVING, AMONG

	Persons.		Males.		Females.	
	Salford.	English Life Table.	Salford.	English Life Table.	Salford.	English Life Table.
All ages.....	27·9	21·5	30·3	22·4	25·8	20·7
Under 5 years ..	106·6	65·7	112·6	70·1	100·5	61·3
5 to 20 years....	7·3	7·1	7·7	7·0	6·9	7·2
20 to 40 years ..	9·6	10·3	10·9	10·1	8·4	10·5
40 to 60 years ..	23·5	18·3	26·6	19·4	20·9	17·2
60 and upwards..	70·9	71·7	73·4	73·9	69·2	69·7

TABLE D.

BIRTHS IN THE BOROUGH OF SALFORD AND IN ITS FOUR REGISTRATION SUB-DISTRICTS DURING 1880, DISTINGUISHING LEGITIMATE AND ILLEGITIMATE BIRTHS ; ALSO, THE PROPORTION OF MORTALITY AMONG INFANTS UNDER ONE YEAR.

	Births.		Percentage of Illegitimate Births to Total Births.	Deaths under 1 year.		Proportion of Deaths under 1 year per 1000 Births.		
	Total.	Illegit.		Total.	Illegit.	Total.	Legit.	Illegit.
Borough	7102	332	4·7	1403	150	197	185	452
Regent Rd.Reg.Sub.Dist.	† 2801	† 146	† 5·2	* 590	* 60	* 211	* 199	* 411
Greengate	1343	58	4·3	279	29	208	195	500
Pendleton (part of)	1778	90	5·1	314	36	177	165	400
Broughton	1180	38	3·2	220	25	186	171	658

* Institution deaths distributed to the districts whence the patients came.

† Illegitimate births distributed to the districts whence the mothers came.

ILLEGITIMACY.—Of the total births registered in Salford during the year 1880, 332 or 4·7 per cent. were illegitimate. The proportion of illegitimate to total births has considerably increased in Salford during the last four years, it was equal to 3·9 and 3·8 per cent. in the years 1877 and 1878 respectively, whilst it rose to 4·2 in the year 1879 and 4·7 in the year 1880.

SECTION XII.

Illegitimacy.

Up to and including the year 1879, the illegitimate births and deaths occurring in the Workhouse, and the deaths in the other public institutions were included as contributing to the corresponding birth and death-rates of the registration sub-districts in which these institutions are situated, and thus these parts of the Borough were necessarily accredited with an undue proportion of mortality. In preparing this table for the present report, however, all the births and deaths occurring in public institutions have been extracted and referred to the districts to which the parties belong. Even after this correction, however, there is a considerable difference in the rates of birth and death amongst children illegitimately born in the several districts of the Borough. Especially we may note that in Broughton 66 per cent. of the children illegitimately born die before reaching the age of twelve months, whereas the rate is 40 and 41 per cent. in the districts of Pendleton and Regent Road respectively. It is worthy of remark, that of the 25 deaths of illegitimate infants under one year of age registered in Broughton district during the year, not less than 17 were the offspring of domestic servants.

Rate of mortality amongst infants illegitimately born.

By the courtesy of the Master of the Workhouse, I have been informed that 60 births of illegitimate children occurred in that institution during the year 1880.

CLASSIFICATION OF THE CAUSES OF DEATH.

The 4,799 deaths registered during the year may thus be grouped. The classification adopted being that of the Registrar General :—

Classification of deaths.

Class I.—Zymotic diseases 1,403, or 29 per cent. of the total deaths. Class II.—Constitutional diseases 784, or 16 per cent. Class III.—Local diseases 1,987, or 42 per cent. Class IV.—Developmental diseases 511, or 11 per cent., and Class V.—Violence 114, or 2 per cent. of the total deaths.

TABLE E.

ESTIMATED POPULATION, BIRTHS, BIRTH-RATES, DEATHS, AND RATE OF MORTALITY PER 1,000 OF THE POPULATION DURING THE YEAR 1880 IN THE BOROUGH OF SALFORD, AND IN EACH OF ITS STATISTICAL SUB-DIVISIONS, FROM ALL CAUSES, FROM EACH OF THE FIVE PRINCIPAL CLASSES, AND FROM CERTAIN OF THE MORE PREVELANT DISEASES, AFTER DISTRIBUTION OF THE DEATHS IN PUBLIC INSTITUTIONS.

I.—ALL AGES.

	BOROUGH OF SALFORD.	REGISTRATION SUB-DISTRICTS.			
		Regent Road.	Green- gate.	Pendle- ton.	Brough- ton.
Population estimated to middle of 1880	171,727	67,839	32,291	41,697	29,900
Births registered in the 52 weeks of 1880....	7,102	2,801	1,343	1,778	1,180
Birth rate per 1000	41.4	41.3	41.6	42.7	39.5
Deaths registered in the 52 weeks of 1880	4,799	2,138	1,074	970	617
Death rate per 1000	27.9	31.5	33.3	23.3	20.6
Rate of Mortality per 1000, from					
Class I.—Zymotic Diseases	8.16	9.60	9.18	6.58	6.08
Class II.—Constitutional Diseases	4.57	5.10	5.21	4.11	3.31
Class III.—Local Diseases	11.56	12.52	15.26	9.35	8.59
Class IV.—Developmental Diseases.....	2.97	3.70	2.63	2.66	2.14
Class V.—Violent Deaths	0.66	0.61	1.02	0.60	0.52
Seven principal Infectious Diseases	7.35	8.70	8.35	5.69	5.48
Phthisis	2.67	3.21	3.13	2.21	1.61
Scrofulous Diseases (other).....	1.24	1.13	1.27	1.44	1.20
Brain Diseases	3.23	3.79	3.65	2.62	2.38
Heart Disease	0.92	0.84	0.90	1.06	0.97
Lung Diseases (other than Phthisis).....	5.84	6.38	8.45	4.18	4.11
Wasting Diseases	2.76	3.48	2.54	2.33	1.97

II.—CHILDREN UNDER FIVE YEARS.

Estimated number living under 5 years.....	24,316	10,287	4,642	5,886	3,501
Registered Deaths under 5 years	2,592	1,115	575	543	359
Percentage to Total Deaths, of Deaths under } 5 years	54.0	52.1	53.5	56.0	58.2
Rate of Mortality, per 1000 living, under 5 years—					
From all causes	106.6	108.5	123.8	92.0	102.5
From Seven principal Infectious Diseases ..	41.6	44.0	49.5	32.9	39.7
Small Pox .....	....	..	..	..	..
Measles	5.2	4.5	7.1	6.1	3.1
Scarlet Fever	7.7	10.3	10.3	3.9	3.1
Diphtheria	0.5	0.01	0.04	0.7	1.4
Whooping Cough	8.6	8.2	11.6	7.8	7.4
Fever.....	1.2	1.4	0.1	0.9	1.1
Diarrhœa	18.4	19.5	18.1	13.6	23.4
From Scrofulous Diseases	8.7	7.2	8.6	10.7	9.7
,, Nervous and Brain Diseases.....	13.4	13.9	17.0	11.7	9.7
,, Acute Lung Diseases	20.0	19.9	26.7	15.1	19.4
,, Wasting Diseases.....	12.9	14.4	11.5	10.8	13.7

TABLE F.

ANNUAL RATE OF MORTALITY IN SALFORD DURING 1880 FROM FIVE CLASSES OF DISEASE, AND FROM CERTAIN PREVALENT DISEASES, AT FIVE GROUPS OF AGES, PER 1000 PERSONS ESTIMATED TO BE LIVING AT THOSE AGE-GROUPS RESPECTIVELY.

	1.	2.	3.	4.	5.	6.
	All Ages.	0-5 Years.	5-20 Years.	20-40 Years.	40-60 Years.	60 Yrs. & Up.
All Causes	27·9	106·6	7·3	9·5	23·5	70·9
CLASS I.—Zymotic Diseases	8·2	45·4	3·0	1·2	1·6	3·3
II.—Constit. Diseases	4·6	9·2	1·6	4·2	6·6	5·5
III.—Local Diseases ..	11·5	37·2	2·3	3·4	13·8	44·0
IV.—Develop. Diseases	2·9	13·6	0·1	0·3	0·4	17·0
V.—Violence	0·7	1·2	0·3	0·4	1·1	1·1
Seven Zymotics	7·3	41·6	2·8	0·9	1·0	2·2
Small Pox .....	..	..	..	..	..	..
Measles	0·8	5·2	0·1	..	..	..
Scarlet Fever	1·6	7·7	1·7	0·1	..	..
Diphtheria	0·1	0·5	0·1	..	..	..
Whooping Cough	1·3	8·6	0·1	..	..	..
Fever	0·8	1·2	0·7	0·7	0·6	0·7
Diarrhœa	2·8	18·4	0·1	0·1	0·4	1·5
Phthisis.....	2·7	1·0	1·2	3·9	5·0	1·4
Other Tubercular Diseases...	1·2	7·7	0·4	0·3	..	..
Brain Disease	3·2	13·4	0·6	0·8	2·5	9·6
Heart Disease	0·9	0·2	0·2	0·6	2·2	5·0
Lung Disease	5·8	20·0	0·9	1·3	6·9	23·8
Wasting Disease	2·8	12·9	0·1	..	0·3	16·9

DEATHS FROM SEVERAL CAUSES AT ALL AGES, AND AT SIX GROUPS OF
AGES IN THE BOROUGH AND IN ITS REGISTRATION SUB-DISTRICTS
DURING THE YEAR 1880.

	All Ages.		Deaths at the following Ages.						Deaths in the Registration Sub-Districts.			
	Corrected Annual Average, 1870-79.	1880.	Under 5 Years.		5-20.	20-40.	40-60.	60 and upwards.	Regent Road.	Greengate.	Pendleton.	Broughton.
			0-1.	1-5.								
All Causes	4754	4799	1403	1189	391	543	669	604	2138	1074	970	617
Class I.—Zymotic Diseases.												
Small-pox	93	134	27	99	7	1	2	5	33	39	11	
Measles	144	279	14	174	86	3	2	153	69	37	20	
Scarlet Fever	175	22	2	13	6	2	1	5	3	6	8	
Diphtheria	18	219	85	125	9	2	2	88	56	49	26	
Whooping Cough	151	20	2	3	10	7	2	17	2	2	1	
Fever { Typhus	18	84	2	15	33	27	7	42	14	14	14	
Enteric	84	26	1	12	3	3	4	15	5	4	2	
Simple Continued . .	17	477	275	172	4	3	10	13	219	90	86	82
Diarrhoea	327	3	1	2	2	2	2	2	1	1	1	
Cholera & Choleraic Diarrhoea	2	30	7	20	3	2	2	11	9	8	2	
Croup (true)	48	10	2	2	2	2	2	4	2	3	1	
Puerperal Fever	6	14	2	2	3	5	2	4	5	2	4	3
Rheumatism	25	33	25	5	2	3	2	15	6	8	4	
Syphilis	36	7	2	2	2	5	2	3	2	2	2	
Delirium Tremens & Intemp.	16	45	23	10	2	3	4	23	4	13	5	
Other Zymotic Diseases	55											
Class II.—Constitutional Dis.												
Dropsy	24	20	1	9	2	3	3	2	14	3	2	1
Cancer	75	74	2	2	1	11	35	27	30	19	15	10
Other Diathetic Diseases . .	12	17	2	2	1	1	7	6	7	4	2	4
Tabes Mesenterica	67	91	51	31	5	3	1	2	32	29	24	6
Phthisis	470	459	9	16	62	219	141	12	218	101	92	48
Hydrocephalus	69	90	42	32	12	4	2	34	8	24	24	
Other Tubercular Diseases . .	35	33	25	5	3	2	2	11	4	12	6	
Class III.—Local Diseases.												
Apoplexy	66	68	2	1	1	5	27	34	29	13	12	14
Paralysis	56	49	2	2	1	6	12	30	25	8	9	7
Epilepsy	19	22	1	2	1	14	6	2	15	4	1	2
Convulsions	249	246	176	63	4	1	2	107	60	53	26	
Other Brain Diseases	183	170	37	47	26	17	27	16	81	33	34	22
Heart Disease	192	159	6	2	13	34	63	43	57	29	44	29
Bronchitis	628	583	133	114	10	24	132	170	245	184	89	65
Pneumonia	243	329	84	104	27	36	53	25	143	79	69	38
Other Lung Diseases	74	91	32	19	9	11	12	8	45	10	16	20
Digestive Organs, Disease of	156	170	47	19	15	23	38	28	64	45	40	21
Urinary Organs, do. . .	63	73	1	16	6	18	16	16	29	17	18	9
Generative Organs, do. . .	8	11	2	2	2	4	6	1	3	4	1	3
Joint Disease	6	13	1	2	5	2	2	1	5	4	3	1
Skin Disease	5	3	1	1	1	2	2	1	1	2	2	2
Class IV.—Developmental Dis.												
Premature Birth	81	85	85	2	2	2	2	2	33	17	19	16
Teething	31	4	3	1	2	2	2	2	2	2	1	3
Malformation	14	14	14	2	2	2	2	2	4	2	6	2
Childbirth	29	19	2	2	2	17	2	2	11	1	7	2
Old Age	154	143	2	2	2	2	4	139	76	27	32	8
Atrophy	306	246	180	48	8	2	5	5	127	38	46	35
Class V.—Violent Deaths.												
Accident	123	102	12	16	21	17	27	9	39	31	23	9
Homicide	2	3	2	2	2	1	2	2	1	1	2	1
Suicide	8	9	2	2	2	2	5	2	1	1	2	5
Not Specified	91	2	2	2	2	2	2	2	2	2	2	2

TABLE H.

CAUSES OF DEATHS REGISTERED IN SALFORD IN EACH OF THE TEN YEARS 1870-79; AVERAGES, 1870-79; AND DEATHS REGISTERED IN 1880, AND IN EACH QUARTER OF 1880.

Mean Temperature	48.2	48.3	49.6	48.5	48.7	49.4	49.3	48.8	48.6	45.8	49.3	1880.			
	Quarter ending											Apr. 2nd.	July 2nd.	Oct. 2nd.	Jan. 1, 1881.
Years	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880				
CAUSES OF DEATH.	3167	3815	3299	3884	3935	4271	4407	4079	4336	4495	4799	1129	1099	1374	1197
Class I.—Zymotic Diseases.															
Small Pox	34	227	41	4	4	32	347	93	1	..	..	..	..	..	..
Measles	8	160	23	236	138	138	145	137	76	139	134	14	33	21	66
Scarlet Fever	99	60	78	127	156	251	178	119	185	203	279	44	100	66	69
Diphtheria	10	12	11	8	14	25	10	13	19	24	22	4	6	6	6
Whooping Cough	119	113	171	49	133	142	155	102	132	144	219	117	56	25	21
Fever { Typhus	49	20	8	14	20	9	9	8	12	4	20	1	7	3	9
Enteric	82	65	78	63	73	70	47	83	82	52	84	12	10	23	39
Simple Continued ..	..	..	..	11	31	32	19	19	22	6	26	4	4	8	10
Diarrhoea	304	359	249	278	296	283	263	207	340	141	477	13	20	388	56
Cholera & Choleraic Diarrhoea	2	2	..	1	1	..	4	..	4	1	3	1	..	2	..
Croup (true)	43	42	37	32	41	43	42	27	47	48	30	9	7	3	11
Puerperal Fever .....	..	..	..	9	7	15	5	3	4	7	10	1	4	2	3
Rheumatism	16	19	15	18	31	17	19	34	23	17	14	1	4	5	4
Syphilis	10	21	26	20	37	28	33	39	45	41	33	8	7	10	8
Delirium Tremens and Intemp.	3	11	6	9	17	29	22	11	13	13	7	2	1	1	3
Other Zymotic Diseases	30	35	24	42	53	35	46	70	76	53	45	6	10	17	12
Class II.—Constitutional Dis.															
Dropsy	33	32	20	24	22	16	9	20	4	18	20	1	5	4	10
Cancer	29	44	49	61	72	73	73	81	80	66	74	18	17	25	14
Other Diathetic Diseases	4	3	6	7	9	9	7	16	19	17	17	4	6	4	3
Tabes Mesenterica	55	45	29	31	49	63	84	64	75	66	91	16	12	42	21
Phthisis	328	396	368	374	339	382	405	413	434	480	459	143	125	96	95
Hydrocephalus	17	28	27	35	87	82	62	68	87	86	90	25	12	38	15
Other Tubercular Diseases ..	24	25	29	37	18	20	10	39	29	59	33	7	8	10	8
Class III.—Local Diseases.															
Apoplexy	57	37	39	61	59	65	48	58	60	66	68	21	13	14	20
Paralysis	36	59	48	47	41	48	50	47	39	55	49	12	18	11	8
Epilepsy	8	13	15	20	13	20	15	18	14	23	22	10	5	2	5
Convulsions	146	179	202	172	213	164	201	238	258	298	246	71	54	46	75
Other Brain Diseases	138	159	123	146	130	157	157	152	196	173	170	46	47	45	32
Heart Disease	133	152	179	195	153	144	142	140	172	191	159	40	39	38	42
Bronchitis	428	484	398	472	464	585	537	582	577	711	583	178	141	77	187
Pneumonia	111	145	103	134	166	239	250	280	285	304	329	76	104	56	93
Other Lung Diseases	36	63	36	68	63	66	55	65	84	87	91	22	18	23	28
Digestive Organs, Disease of.	101	92	110	122	148	126	150	156	132	172	170	32	40	55	43
Urinary Organs, Disease of ..	26	40	48	48	61	66	51	70	56	68	73	16	17	18	22
Generative Organs, Disease of.	12	6	5	9	9	7	6	4	6	5	11	3	2	2	4
Joint Disease .....	..	..	..	..	5	8	11	7	13	10	13	3	1	4	5
Skin Disease	6	2	6	6	3	3	3	3	3	4	3	..	2	..	1
Class IV.—Developmental Dis.															
Premature Birth	63	64	70	56	65	63	91	55	64	91	85	29	17	17	22
Teething	19	50	38	40	28	24	43	9	6	4	4	..	1	3	..
Malformation	15	4	2	2	11	10	16	20	11	28	14	5	2	6	1
Childbirth	26	17	16	18	36	33	22	21	20	27	19	4	7	4	4
Old Age	120	121	128	156	133	159	138	114	95	122	143	38	30	34	41
Atrophy	204	252	239	283	203	274	295	253	307	244	246	48	57	87	54
Class V.—Violent Deaths.															
Accident	76	81	101	128	101	101	100	116	115	112	102	21	28	28	25
Homicide	1	..	2	2	2	1	..	1	5	3	3	1	1	1	..
Suicide	2	3	5	9	12	3	14	4	9	12	9	2	1	4	2
Not Specified	104	73	91	200	168	111	18	..	..	..	..	..	..	..	..

Class i.—ZYMOTIC DISEASES.—On reference to Tables E and G, it will be seen that 1,403 deaths, or 29 per cent. of the total mortality, were due to Zymotic diseases. Of these deaths, 1,261 were referred to one or other of the seven more familiar infectious diseases, giving a death rate from this group equal to 7·4 per 1,000 persons living at all ages. This rate has only twice been exceeded in Salford during the last ten years, namely, in the Small-pox epidemic years 1871 and 1876, when the Zymotic rate of mortality was equal to 8·1 and 7·8 per 1,000 respectively.

Compared with the average rate of the previous ten years, the Zymotic rate in the year 1880 was in excess by 23 per cent. Tables E and F show that it was to the inordinate prevalence of diarrhœa, whooping cough, and scarlet fever, that this excess was due, and that at all ages under five years, so great was the fatality of these diseases, that the Zymotic deaths were equal to 39·1 per cent. of the deaths from all causes. Consistently with the experience of former years, it is found that Zymotic diseases were more prevalent, or at any rate more fatal, in the district of Regent Road and Greengate than in other parts of the Borough; as regards the former locality, it should be noted that the excess is not due to the presence there of the Work-house or the Fever Hospital, for the deaths in public institutions are always distributed to the districts from which the patients were derived.

SMALL-POX.—It is satisfactory again to note the absence of Small-pox. Small-pox from the list of fatal diseases during 1880. This disease has been fatally prevalent in London, killing 475 persons during the year, but with the exception of a few sporadic cases imported from outside which did not spread, Salford has happily been free from this pestilence. Only ten deaths were referred to Small-pox during the year in the 19 large English towns, for which, together with London, the Registrar General publishes periodical Statistics, and the combined population of which he estimates to be about equal to that of the Metropolis.

MEASLES.—134 Deaths were referred to Measles during the year 1880, against 76 in 1878, and 193 in 1879. The corrected annual average for the preceding ten years being 144.

The following figures show the rate at which this disease has proved fatal in each of the years 1870-79, and also the average rate for the decennium, compared with that for the year 1880. The tables in this report indicate the rates of mortality per 1,000 of the population;—by moving the decimal point two places to the right the facts will, of course, be those for every 100,000 persons living.

1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	Average 1870-9	1880
·07	1·27	·18	1·72	·99	·96	·97	·88	·47	·83	·83	·78

Rate of mortal
ity in recent
years and in
1880.

SECTION XII.

Seasonal fatality.

The following figures give the monthly deaths from Measles for 1880, and also the average number in each month of the preceding ten years, corrected for increase of population for purposes of comparison :—

	Jan.	Feb.	Mar	Apl.	May	Jne.	July	Aug	Sep.	Oct.	Nov.	Dec.
1880.	4	3	7	13	10	11	8	9	3	11	20	35
Corrected average, 1870-9.	11	11	14	18	14	16	11	7	6	8	11	15

This disease thus appears to have been less fatal than usual during the year under review. In the last two months of the year however, it showed signs of again becoming prevalent and fatal.

Scarlet fever.

SCARLET FEVER.—During the year, 279 deaths were referred to Scarlet Fever against 203 in the previous year. The following are the Scarlet Fever rates for recent years :—

Rate of mortality.

1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	Average 1870-79.	1880
·81	·48	·60	·93	1·12	1·74	1·19	·77	1·15	1·20	1·0	1·62

Scarlet Fever thus appears to have been excessively fatal during the year under report ; having exceeded the average by 62 per cent. In one year only of the last ten, namely, that of 1875, has the Scarlet Fever rate exceeded its present proportion.

The annexed Table shows the monthly deaths from Scarlet Fever, compared with the average monthly number, as before :—

Seasonal fatality.

	Jan.	Feb.	Mar	Apl.	May	Jun.	July	Aug	Sep.	Oct.	Nov	Dec.
1880.....	13	11	21	21	38	38	28	19	22	24	23	21
Corrected average, 1870-9.	17	14	15	8	8	13	11	11	15	17	20	28

Adopting the corrected decennial average as the normal monthly rate of death from this disease in Salford, we find by this Table that a sharp epidemic of Scarlet Fever raged from the end of February until towards the end of the year, the figures only approximating to the normal in December.

Diphtheria.

DIPHTHERIA.—This disease does not vary much in point of prevalence from year to year. During the year under report, 22 fatal cases occurred, against 18, the corrected average number. Eight of the cases occurred in Salford proper, six in

Pendleton, and eight in Broughton; and, as usual, the disease was most prevalent during the fall of the year.

WHOOPING COUGH.—This disease was excessively fatal during 1880, 219 deaths having been referred to it in Salford, against 151 the corrected annual average. The deaths from this disease are principally confined to the children of poor persons who are either unwilling or unable to protect them from cold during the acute stage of the disease. The following figures show the death rate from whooping-cough in 1880 and previous years :—

Whooping
Cough.

1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	Average 1870-79.	1880
·97	·90	1·31	·36	·95	·98	1·04	·66	·82	·85	·88	1·28

Rate of
mortality.

This disease was exceptionally prevalent during the first half of the year. The annexed figures give the monthly number of deaths from the disease for comparison with the average :—

	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug	Sep.	Oct.	Nov	Dec.
1880.....	41	33	44	16	22	18	10	9	6	4	8	8
Corrected average, 1870-9.	17	17	20	16	13	15	11	7	8	6	8	16

Seasonal
fatality.

FEVER.—Under this head are included the three principal forms,—typhus, enteric, and simple continued fever. Typhus fever, which assumed an epidemic form in Salford, accounted for 20 deaths during 1880, the largest number recorded in any year since 1874. Enteric fever also was considerably more fatal than usual. Annexed are the fever rates for the last ten years :—

Fever.

1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	Average 1870-79.	1880
1·07	·67	·66	·64	·89	·77	·50	·71	·72	·37	·70	·76

Rate of
mortality.

The annual rate of mortality from “fever” was equal to 0·76 per 1,000 last year as compared with 0·70 the decennial average rate.

The following table of monthly deaths from “fever” shows that September, October, and November were the most fatal

SECTION XII. months in 1880, and this appears to have been the case also in previous years:—

Seasonal fatality.		Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug	Sep.	Oct.	Nov	Dec.
	1880.....	4	9	4	6	10	5	6	10	18	25	23	10
	Corrected average, 1870-9.	10	8	9	8	5	9	7	8	15	14	11	13

Diarrhoea. DIARRHOEA.—The excessive fatality of this disease in 1880 has before been commented upon. With the single exception of the year 1871 the rate of mortality from diarrhoea at all ages has never equalled that of this year since the beginning of the previous decenium.

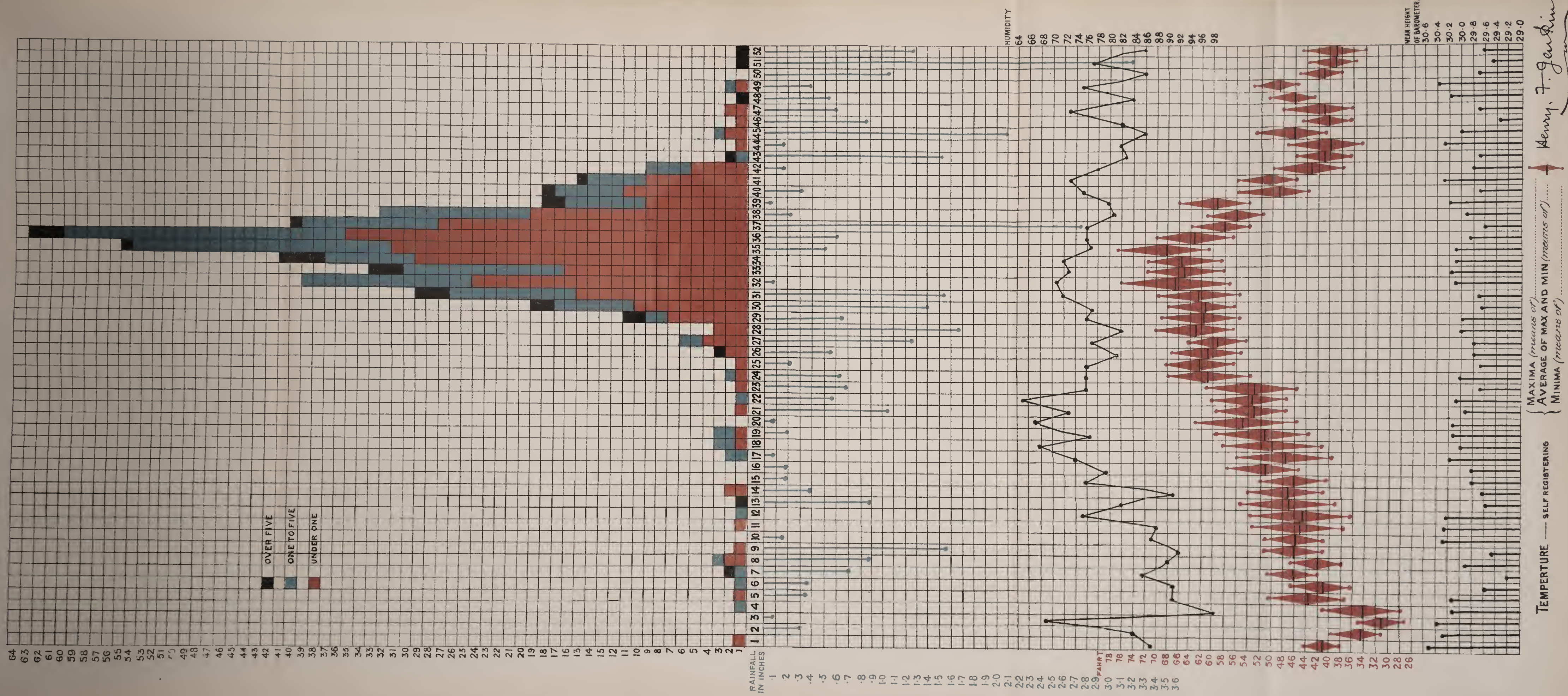
Rate of mortality.	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	Average 1870-79.	1880
	2·47	2·85	1·91	2·03	2·12	1·96	1·76	1·34	2·12	·84	1·94	2·78

In order to obtain a really faithful expression of the havoc which diarrhoea made amongst us during the year, reference should be made to Table E. which shows that of every 1,000 children living during the year, 18·4 died of this disease. The accompanying chart indicates very clearly how fatal is this disease amongst young children. It is interesting also to note the great difference in diarrhoea fatality in hot and dry seasons, as compared with cold and wet ones;—extreme examples of each kind of year have been furnished by the years 1879 and 1880. Sanitarians will await with interest the result of the investigations now being conducted by Dr. Ballard as to the ætiology of this disease.

Constitutional diseases. Class ii.—CONSTITUTIONAL DISEASES.—The diseases comprising this class accounted for 784 deaths in the year under report, which number is equal to 16·3 per cent. of the deaths from all causes, and to 4·6 per 1,000 of the population living at all ages. The bulk of these disorders are of a scrofulous nature, and reference to Table F will show that at various periods of life they are fatal in very different proportions. For instance, the chief member of the class Phthisis, which accounts for 9·6 per cent., or nearly one-tenth of the total mortality, is fatal amongst children under 5 years of age to not more than one per 1,000 living, whereas at the ages from 20 to 40 years and from 40 to 60 years the mortality is equal to 31⁰/₁₀₀ and 5 per 1,000 respectively. The other scrofulous diseases, on the other hand, are comparatively innocuous after childhood is passed, but amongst

SALFORD_1880.

DIARRHŒA MORTALITY & METEOROLOGY.



TEMPERATURE — SELF REGISTERING

MAXIMA (means of)
AVERAGE OF MAX AND MIN (means of)
MINIMA (means of)

Henry F. Gardiner

children under the fifth year they are fatal at the rate of one annual death out of every 130 children living at that age.

Table E shows that as in past years, Constitutional diseases select the most unhealthy localities for their chief ravages; for instance in Broughton, which taken as a whole may still be reckoned the most salubrious district of the Borough, persons die of scrofulous maladies at the rate of one in every 356 persons living, whereas in Greengate, which must be considered the least healthy district in Salford, the proportion is as high as one in 227.

Class iii.—LOCAL DISEASES.—The diseases comprising this important class always form a large factor in the total mortality. In 1880 the deaths referred to them numbered 1987, as compared with 1948, the corrected annual average for the last ten years. Local diseases.

Diseases of the brain and heart were less fatal than usual, accounting in the aggregate for 555 and 159 deaths respectively in 1880, against 573 and 192, the decennial average numbers. Lung diseases, however, showed an increased fatality during the year; and this is especially true with regard to Pneumonia, to which disease 329 deaths were referred in 1880, as compared with 243, the average number.

Class iv.—DEVELOPMENTAL DISEASES.—The diseases included in this class were much less fatal than usual, accounting for only 511 deaths in 1880, against 615, the decennial average. It is probable, however, that this decrease is apparent only, and results from the fact that many of the deaths which in previous times would have been thoughtlessly referred to atrophy and old age, are now assigned to their scientific causes, by a more highly-educated medical profession. Developmental diseases.

Class v.—VIOLENCE.—114 deaths have been caused during the year by one or other of the forms of violence. In the majority of these cases inquests were held,—a process which may usefully be extended to many suspicious deaths which do not come under this class. Violent deaths.

APPENDIX.

TABLE J.

PRICES OF COAL, FLOUR, POTATOES, AND BUTCHER'S MEAT, AND THE
NUMBER OF PAUPERS RELIEVED IN SALFORD, 1871 TO 1880.

	AVERAGE PRICES OF FOOD AND FUEL.				PAUPERISM.	
	Coal, per ton.	Flour, per stone.	Potatoes, per load.	Butchr's Meat, per lb.	Weekly Average of Paupers Relieved during the year.	
					Indoor.	Outdoor.
1871	£ s. d. 0 7 5½	£ s. d. 0 2 0	£ s. d. 0 8 8¼	d. 6¾	791	2343
1872	0 10 0¼	0 2 1¼	0 4 6¾	6½	764	1839
1873	0 15 9¾	0 2 3	0 13 0¼	7¾	817	1711
1874	0 16 1¾	0 2 2	0 11 4	7½	853	1842
1875	0 12 4	0 1 7½	0 10 6¾	7½	872	1652
1876	0 11 6	0 1 9¼	0 10 7½	7½	944	1409
1877	0 10 5	0 2 1½	Various.	7¼	1037	1662
1878	0 9 10	0 1 7½	Various.	7¾	1146	2326
1879	0 7 5	0 1 11½	0 14 0	6¾	1442	4023
1880	0 7 11	0 2 5¾	0 10 0	7⅛	1559	3488

RATES OF MORTALITY IN THE FOUR REGISTRATION SUB-DISTRICTS OF
SALFORD, DURING EACH QUARTER OF THE YEARS 1870-1880.

WHOLE YEAR.

REG. SUB-DIST.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	Mean 1870- 79.	1880.
Regent Road..	27·9	31·7	26·6	30·0	30·5	32·2	31·1	29·4	27·2	28·1	29·5	31·5
Greengate ..	28·7	34·2	29·7	32·0	30·6	33·8	32·8	27·5	30·0	30·1	30·9	33·3
Pendleton ..	23·1	27·7	23·0	26·5	26·4	25·6	26·9	24·4	26·2	24·2	25·4	23·3
Broughton ..	17·7	17·9	17·4	19·3	21·1	22·5	25·1	22·0	26·2	21·6	21·1	20·6
BOROUGH ..	25·8	30·3	25·3	28·3	28·2	29·5	29·5	26·3	27·1	26·7	27·7	27·9

FIRST QUARTER.

Regent Road.	28·7	24·9	27·6	30·8	27·2	32·2	33·5	31·8	25·3	31·7	29·4	28·8
Greengate ..	34·9	30·1	31·5	33·7	31·0	36·7	39·3	29·6	26·4	39·7	33·3	32·0
Pendleton ..	23·9	27·9	26·1	28·6	28·4	30·5	27·5	25·9	23·5	30·2	27·3	23·1
Broughton ..	20·2	16·5	15·0	18·2	19·7	22·8	25·4	21·4	27·2	30·5	21·7	19·0
BOROUGH ..	29·4	26·5	27·0	30·0	28·2	31·5	32·0	28·4	25·8	33·6	29·2	26·3

SECOND QUARTER.

Regent Road.	25·5	33·2	25·2	30·8	26·5	28·3	27·5	33·4	23·8	27·1	28·1	28·6
Greengate ..	21·5	29·1	28·1	35·8	28·1	31·1	31·7	32·4	23·5	27·4	28·9	37·5
Pendleton ..	19·9	25·6	19·9	24·1	21·6	18·9	26·3	23·1	25·4	20·2	22·5	18·5
Broughton ..	20·8	16·2	19·4	20·7	19·7	18·3	24·5	22·8	20·9	19·4	20·3	15·9
BOROUGH ..	22·4	28·7	24·2	29·4	24·1	25·1	28·1	28·8	23·2	24·4	25·8	25·6

THIRD QUARTER.

Regent Road.	28·9	37·0	26·3	31·4	33·1	35·5	31·4	25·8	29·7	21·0	30·0	36·8
Greengate ..	34·2	42·7	31·7	32·0	30·6	31·7	30·7	22·6	32·2	27·5	31·6	35·2
Pendleton ..	25·5	27·4	22·7	25·0	28·5	23·8	22·6	22·8	26·6	20·0	24·5	23·9
Broughton ..	12·8	17·3	14·8	19·5	20·8	22·9	22·7	16·8	24·7	19·0	19·1	29·0
BOROUGH ..	27·8	34·5	25·3	28·0	29·3	30·3	27·7	23·2	28·1	20·8	27·5	32·0

FOURTH QUARTER.

Regent Road.	28·4	31·6	27·0	27·0	35·2	33·0	31·9	26·6	29·8	32·5	30·3	32·0
Greengate ..	24·1	34·9	27·6	26·5	32·6	35·7	29·5	25·1	39·8	25·8	30·2	28·4
Pendleton ..	23·2	30·0	23·5	28·3	27·9	29·0	31·1	25·8	29·4	26·3	27·5	27·6
Broughton ..	16·8	21·5	20·1	18·9	23·9	26·0	27·9	27·1	32·1	17·7	23·2	18·6
BOROUGH ..	24·6	31·5	24·8	28·0	28·9	31·5	30·2	25·0	31·1	29·6	28·5	27·7

TABLE GIVING THE NUMBER OF DEATHS AND RATE OF MORTALITY FROM SEVEN INFECTIOUS DISEASES, IN EACH QUARTER OF THE TEN YEARS, 1870-79, AND ALSO THE RATE FOR 1880.

		1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	Death-Rates	
												1870-9.	1880.
SMALL POX.	First Quarter ..	17	8	33	1	1	2	48	55	1	..	0·48	..
	Second „ ..	10	53	6	..	..	4	107	36	..	..	0·62	..
	Third „ ..	4	58	..	1	..	5	93	2	..	..	0·45	..
	Fourth „ ..	3	108	2	1	3	21	99	..	..	..	0·67	..
MEASLES	First Quarter ..	3	17	6	114	7	20	26	37	5	56	0·81	0·33
	Second „ ..	2	100	6	105	19	33	17	81	11	48	1·18	0·77
	Third „ ..	..	38	1	9	48	45	19	13	17	14	0·56	0·49
	Fourth „ ..	3	5	10	8	64	40	83	6	43	21	0·78	1·54
SCARLET FEVER.	First Quarter ..	17	17	13	22	56	35	74	32	36	89	1·09	1·03
	Second „ ..	23	14	13	18	21	33	33	29	21	32	0·67	2·33
	Third „ ..	27	9	14	27	30	74	14	18	50	35	0·84	1·54
	Fourth „ ..	32	20	38	60	49	109	57	40	78	47	1·48	1·61
DIPH- THERIA.	First Quarter ..	2	5	2	2	1	5	2	5	1	9	0·08	0·09
	Second „ ..	3	1	2	3	4	3	2	1	4	5	0·08	0·14
	Third „ ..	2	3	1	3	7	5	2	4	4	4	0·11	0·14
	Fourth „ ..	3	3	6	..	2	12	4	3	10	5	0·14	0·14
WHOOPI- NG COUGH.	First Quarter ..	92	17	90	5	53	10	73	21	32	44	1·23	2·73
	Second „ ..	18	21	60	13	41	34	47	46	50	28	1·01	1·30
	Third „ ..	3	28	19	1	30	36	22	20	28	27	0·59	0·58
	Fourth „ ..	6	47	2	30	9	62	13	15	22	45	0·70	0·49
FEVER.	First Quarter ..	23	17	16	20	32	30	22	28	26	17	0·64	0·40
	Second „ ..	23	15	13	15	26	18	19	23	17	18	0·53	0·49
	Third „ ..	41	18	26	23	23	27	14	23	36	18	0·70	0·79
	Fourth „ ..	44	35	31	30	43	36	20	36	37	8	0·90	1·35
DIAR- RHEA.	First Quarter ..	31	11	13	12	17	27	17	19	17	18	0·50	0·30
	Second „ ..	26	19	9	27	26	26	13	16	17	13	0·53	0·47
	Third „ ..	218	287	189	219	222	193	187	134	273	75	5·60	9·04
	Fourth „ ..	29	42	38	20	31	37	46	38	33	38	0·98	1·30

The Medical Officer of Health has been favoured by the Public Analyst with the following particulars of his examination of Water supplied to Salford in each month of the year:—

ANALYSIS OF THE SALFORD WATER DURING THE TWELVE MONTHS.

All results are expressed in grains per gallon.

Date.	App. in 2-ft. Tube. 1.	Smell at 100° F. 2.	Chlorine. 3	Phosphoric Acid. 4.	Nitrogen. 5.	Free Ammonia. 6.	Albuminoid Ammonia. 7.	Hardness.		Oxygen. Two Minutes 10.	Absorbed in Four Hours. 11.	Total Solid Matter. 12.	Microscopical Examination of Deposit. 13.
								Before Boiling. 8.	After Boiling. 9.				
January	Clear yellow.	Slight.	·5	Nil.	Nil.	·0005	·003	3·5	3·0	Nil.	·025	4	Nil.
February	Yellow.	Do.	·6	Nil.	Nil.	·0010	·005	3·5	3·0	Nil.	·015	4	Nil.
March	Clear.	Nil.	·8	Nil.	Nil.	·0014	·003	4	3	·0036	·086	6	Nil.
April	Yellow.	Nil.	·7	Nil.	Nil.	·0014	·005	3	2·5	·0014	·114	5·5	{ Oxide of Iron.
May	Yellow.	Nil.	·6	Nil.	Nil.	·0028	·0035	2·5	2·0	·014	·019	5	
June	Cloudy.	Slight.	·5	Trace.	Trace.	·0021	·0028	3	2·5	·005	·053	5·5	{ Oxide of Iron.
July	Clear.	Nil.	·5	Nil.	Nil.	·0020	·004	3	2·5	·002	·060	4	
August	Cloudy.	Nil.	·7	Nil.	Nil.	·0035	·0014	3·5	3	·011	·067	4	Nil.
September . .	Clear.	Slight.	·7	Nil.	Nil.	·0007	·0021	3·5	3	·016	·072	5·5	Nil.
October	Yellow.	Nil.	·6	Nil.	Nil.	·0014	·0021	3	2·5	·025	·039	4	Nil.
November . .	Clear.	Nil.	·7	Nil.	Nil.	·0014	·035	3·0	2·5	·0028	·042	5	Nil.
December . .	Cloudy.	Nil.	·7	Trace.	Trace.	·0028	·007	3·1	3·0	·044	·134	10	{ Oxide of Iron.

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